

UNIVERSITY OF TORONTO



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I.

CULTIVATION OF FLAX

REARING OF CATTLE WITH PARTICULAR REFERENCE
TO FEEDING AND PASTURE-MANAGEMENT

ON THE

CULTIVATION OF FLAX,

&c. &c.

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ON THE

CULTIVATION OF FLAX;

THE

FATTENING OF CATTLE WITH NATIVE PRODUCE;
BOX-FEEDING; AND SUMMER-GRAZING.

By JOHN WARNES, Esq.

DEDICATED TO THE LANDLORDS AND TENANTS OF GREAT
BRITAIN AND IRELAND.

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“ Oh! is there not some patriot in whose power  
That best, that god-like luxury is plac'd  
Of blessing thousands, thousands yet unborn,  
Through late posterity? Some large of soul  
To cheer dejected industry? To give  
A double harvest to the pining swain,  
And teach the lab'ring hand the sweets of toil?  
—Yes, there are such.” THOMSON.

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*PROFITS OF THE WORK TO BE APPLIED TO THE PROMOTION OF
THE FLAX CAUSE.*

L O N D O N :

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P R E F A C E.

So important was a preface considered in former times, that the talents of Doctor Johnson were not unfrequently called into requisition to supply authors with such an appendage to their works. Now, little regard is paid to this, perhaps, most difficult department of literary labor.

I hope, however, that my introductory remarks will obtain an attentive perusal, at least, from every true lover of his country: for my theme, though simple, is vast; comprehending nothing less than complete deliverance from that accumulated mass of pauperism which preys upon the vitals of the nation. A mass that, if not supplied with other food than the bread of idleness, must—at no very distant date, like pent-up steam—explode. A theme worthy of a Johnson's pen! yet committed, by an unerring Providence, to an obscure individual, without any claim to literary merit or to public notice, in order that the “excellency of the power might be of God and not of man.” Of God, because the highest authorities of the state, in Parliament assembled, avowed their inability to provide a remedy for the national distress. Nor do the numerous plans attempted by private enterprize, or proposed at public meetings, offer any prospect of permanent relief; the cultivation of flax alone excepted.

Years of reflection and diligent research into the requirements, habits, genius, and physical powers of the

labouring population, justify this conclusion, which is strengthened by the results of successful experiments, by private communications from almost every county in England, and confirmed by the experience of those gentlemen whose statements are recorded in the following pages.

It will be seen that my progress had to encounter the usual routine of oppositions attendant upon every good cause; and that a faithful history of my discovery of the intrinsic value to the British nation of the flax-crop, rendered the relation of those oppositions unavoidable.

The fall of the Norfolk Flax Society—the subsequent attempts to frustrate my labours—with the ebullitions of ignorance and animosity, of envy and contempt, are also subjects in themselves unworthy of notice. But I record them as a salutary warning to those who suppose that rank and numbers can annihilate the advocate of a cause sustained by the fundamental principles of Christianity; and as an encouragement to all who may hereafter tread the path of the philanthropist and of the patriot.

The extensive circulation of my pamphlets—the demand for new editions—the interest excited as each number of my Public Letters appeared—and the acknowledgments from every part of the kingdom of benefits derived—evinced the rectitude of my advocacy.

Doubly gratifying, therefore, was the task that devolved upon me, not of composing a new book, but of compiling one that had already appeared in a variety of detached forms, and had long been subjected to the ordeal of public criticism. Not a sentence has been refuted, nor a case of failure produced, where my direc-

tions have been strictly adhered to. Circumstances may have interfered to prevent the full realization of promised benefits. But the great majority of successful instances indisputably prove that all the others might have been equally so if conducted upon the same principles.

Now that my publications appear in a collected form, many errors for the future may be avoided. But however simple every process, and clear every description, it is scarcely possible, particularly in the management of flax, for amateurs to succeed without the aid of practical instruction.

I have endeavoured to show that county associations, with branches attached, were eminently calculated to disseminate information. I therefore insert the advertisements, circulars, and reports, of those already formed, for the guidance of parties who may hereafter perceive the desirableness of establishing similar societies. Their insertion may be thought by some irrelevant and confusing; as also the controversial portions of my letters, political allusions, &c.; but had I omitted them, the nationality of my undertaking and the independence of my exertions would have been destroyed.

My volume is offered as a book of reference, rather than as a connected history. Information will be found indiscriminately distributed. But the Index will remedy any inconvenience on this account, by at once referring the inquirer to the subject of his immediate research.

Although the flax-plant was indigenous to this country, and its properties, both as respects fibre and seed, were known from time immemorial, yet its real value remained undiscovered till the invention of the compound. Every attempt to fatten cattle upon linseed

with economy had failed. Oil-cake, the refuse of linseed, stood first in the farmer's estimation. He maintained that it was superior to the pure seed itself; nor could his deep-rooted prejudice be removed till a chain of successful experiments rendered conviction irresistible.

My attempt to grow the seed of which this favourite oil-cake was composed, arose from the desire of substituting native for foreign produce to fatten cattle, and originated the present movement towards the growth of flax. An insignificant commencement! but destined, like many similar dispensations of Providence, to produce benefits to which no assignable limits can be placed.

Box-feeding and summer-grazing next engaged my attention; which, in combination with flax-culture, form the foundation of the following pages; and I am confident that the advantages therein portrayed will be fully realized by all who rightly apply them. It would be folly to dispute their solidity without the test of practical inquiry. Nor do I intend again to enter the lists of controversy with parties guided only by empty theories and idle prejudices.

The opposition of the Anti-Corn-Law League forms a remarkable feature in the history of the present movement to extend the cultivation of flax. I refer to it with pain: for though no inconsiderable portion of the free-trade party were favourable to the culture, and many flax-spinners promoted it by subscriptions and premiums, yet, in their collective capacity, they greatly retarded the cause. Their sweeping condemnation of landowners, for the supposed attempt "to substitute flax for wheat, and to lessen the means of subsistence," was inconsistent

and unjust. Nor can ignorance of the Flax Society's real designs be pleaded as an excuse: for the League possessed reports and publications of its proceedings, in which the desire to increase production and to ameliorate the condition of the poor was clearly defined.

Under the improved management of flax, the price must ultimately approximate to that of cotton, and enable linen to compete with calico; this would prove more fatal to the manufacturers of the latter than agricultural protection. Were the climate of England genial to cotton, the spinner, unquestionably, would be anxious to promote the home growth, regardless of those injurious effects upon wheat, deteriorations of soil, and prohibitions in leases, which he now advances against the inestimable flax-plant; but, if any grounds ever existed for such objections, they have been rendered obsolete by modern discoveries and by scientific improvements in agriculture.

Another opposition arose from the scheme of substituting for flax the *Camelina sativa*, a plant pompously called "the Gold of Pleasure." The stalks were represented as containing superior flax, and the seed to be of more value than linseed. Through circulars, advertisements, and public letters, glowing descriptions were promulgated: the project attracted much attention, and obtained some converts. I sowed a little of the seed myself by way of experiment: the result induced me to warn the public against the delusion; on which account an action was commenced against me, but quickly withdrawn for obvious reasons; afterwards Mr. Taylor secured a patent for extracting lamp-oil from the seed, for which it appears to be well adapted.

About the same time Mr. Hutcheson obtained a patent for compressing into cake linseed-oil with the meal of barley, or that of beans, peas, &c.; as did also Mr. Hill for the meal of linseed baked with similar ingredients. Both attempts, being complicated and expensive, failed to reward the projectors, or to confer any benefit upon the community: for baking, pressing, and forming into shapes are superfluous operations, deteriorating, instead of contributing, to the fattening properties of the materials.

I had myself a large oven and steam-apparatus erected for cooking roots, &c.; but discontinued their use in favour of boiling and scalding, these being more simple and better adapted to every grade of farmer. As yet I have seen nothing so effective and economical as an iron copper.

Since this Preface was commenced twelve months have elapsed, and additional opportunities been afforded me of ascertaining the results of experiments, the omission of which would have rendered my work incomplete. I resume my pen, therefore, not to enforce untried theories, but to record authenticated facts.

If I had ever any solid reasons for promulgating my plans, those reasons are rendered doubly urgent at the present crisis. The repeal of the corn-laws is insisted upon by the League, with all the art that human ingenuity can devise, and with all the power that money can command; while agriculturists, formed into protective associations, are equally determined to uphold the existing duties. Whatever may be the result of the conflict, it is evident that farmers who have adopted the cultivation of flax, the fattening of cattle upon native

produce, &c., &c., must be better prepared to sustain the shock of free-trade than those who resort to foreign manure for land, and food for cattle. At all events, it is certain that a high price for the common necessaries of life cannot be sustained; that profits upon land must be derived from increased production; and that farmers ought no longer to hold out against the adoption of new systems of improvement.

The soil, and the poor, are, through the dispensation of Providence, talents committed to our charge, for the abuse or neglect of which we are accountable. As stewards over these great trusts, it is incumbent upon us to render them subservient to the public weal. This, an enlightened philanthropy will acknowledge, science point out the way, and an increasing population enforce. The requirements of the people include raiment as well as food; and it is a question whether the cost for labour in providing the former is not greater than that for the latter. Our soil and climate are adapted to the cultivation of other crops besides wheat, barley, and turnips. Could we grow cotton, the nation would be richer by all the sums now sent abroad for that article: but, as such an undertaking would be fruitless, why should not our attention be turned to the culture of flax?—a plant for which, including the seed, oil, and cake, 400,000*l.* per week are expended with foreigners!

The object of my book is to show that all this money might be circulated at home, to the improvement of the soil and to the advancement of the poor. The League points to our half-cultivated fields, and tells us that we are cumberers, not tillers, of the ground. Reflective and patriotic minds admit the justice of the

accusation, and feel that the stigma ought to be removed. But how to accomplish this desideratum is a problem they have failed to solve. Nor can it be solved, except through the national adoption of the flax crop; because the redundant population would obtain the employment, agriculture the support, and trade the encouragement which each so greatly needs; because the formation of linseed into food to fatten cattle, and the sale of flax, will be fresh sources of wealth to the British farmer; and because an impetus would be given to home trade in general by the increased price of wages, and by the consequent increased consumption of all the common necessaries of life.

In truth, it is impossible to form an estimate of the advantages the community would derive; for, independent of all pecuniary consideration, moral, civil, and religious order are involved in the magnitude of the undertaking.

The redundant juvenile population, in particular, has long been the bane of society: an irremediable evil, except through permanent employment; an evil, the removal of which has for years excited general solicitude. But, except the cultivation of flax, nothing effective has yet been devised. Effective, because, if the poor-rates at Trimmingham have been reduced to one rate in three-quarters of a year, at threepence in the pound, through the employment afforded by flax-culture, it is but reasonable to assume that the same effect would be produced in every parish throughout the kingdom.*

Less than one acre of land to a hundred, now in culti-

* See p. 50.

vation, would produce more flax than the redundant population could prepare for market; be the means of circulating annually, chiefly in wages, three millions of money in the rural districts, and of retaining between two or three millions besides, now sent abroad for linseed, oil, and cake. The accuracy of these depositions may be ascertained by a reference to Government Returns, and to the Reports of the Irish Flax Improvement Society. It will then be found that the sums specified may be doubled.

That a cause of such vital importance should have rested so many years upon individual effort and expense must strike the reader with astonishment. But, regardless of every consideration except that of national benefit, I prosecuted my labours, and am enabled to look back upon my losses, mortifications, and disappointments with composure.

During the past year my farm has been a source of continued attraction to visitors, the number of my correspondents been greatly increased, and the compound system of fattening cattle, added to the erection of boxes, rapidly extended.

Thus far the soundness of my theory and practice is confirmed. Additional proofs also have been afforded that, in every part of the kingdom where corn can be produced, the soil is favourable to the growth of flax; and that the crop would be extensively cultivated, provided Societies were established for the preparation of the fibre, or factors found to purchase the stalks according to the Continental system. A Flax Company has already been formed at Ipswich; the first report of which is favourable to the undertaking, and the culture

of the plant ably advocated by the local papers of that town and neighbourhood.

Upon my own premises, under the agency of Belgians from the celebrated Courtrai district, several young people have become expert hand-scutchers, and are ready to go out as instructors; others are also being taught to dress flax by machinery; and, in fact, a complete establishment is formed, such as ought to have been under the management of local societies: but the cold neglect of some, and the inconsiderate opposition of others, compelled me to pursue an independent course. It is therefore with inexpressible feelings of gratitude towards an overruling Providence, that I find myself in a position to employ a number of youths, from thirteen years old and upwards, at wages varying from 5*s.* to 9*s.* per week, whose previous subsistence was extremely precarious, and whose reformed habits evince the salutary effect of constant work at adequate wages.

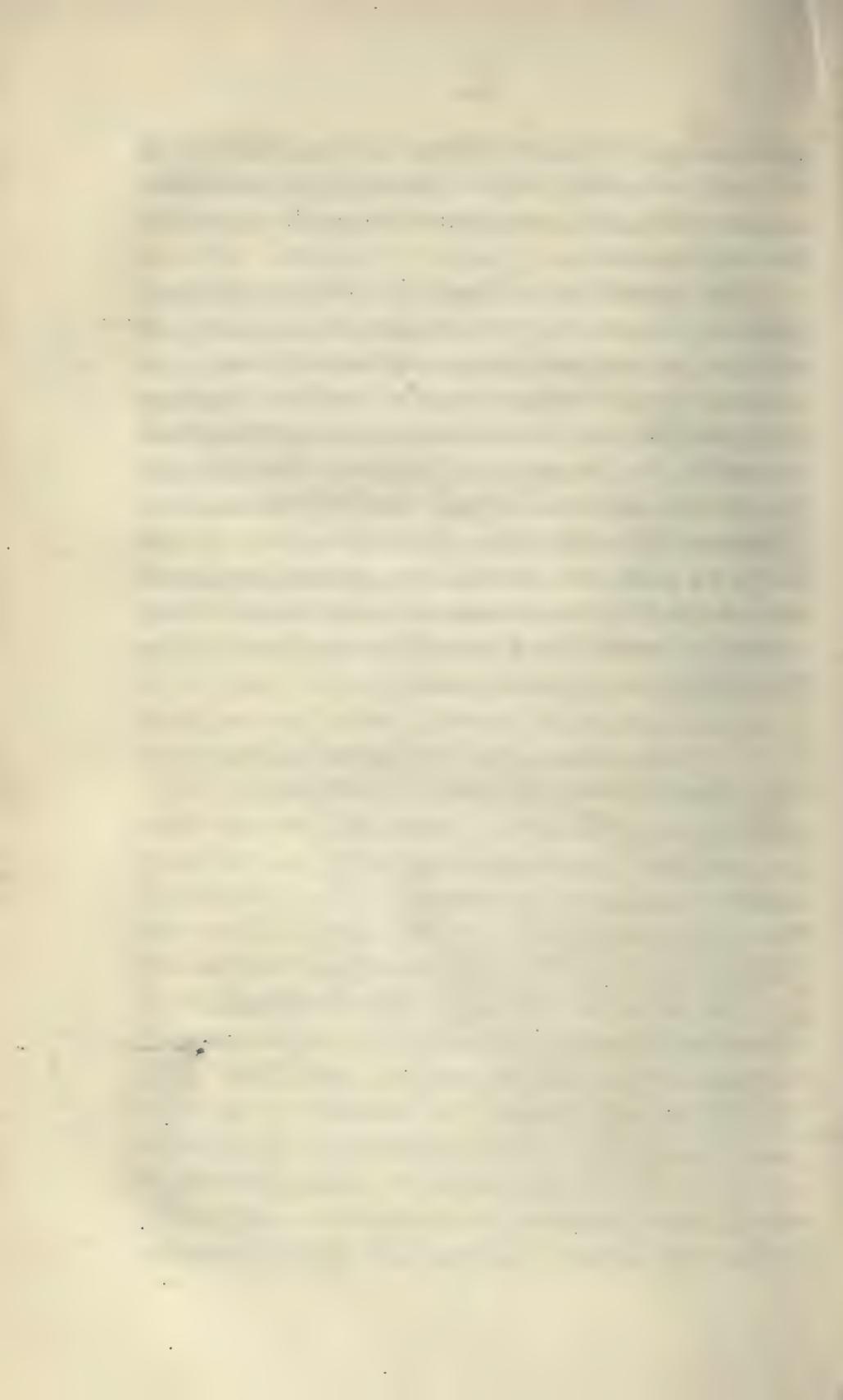
It is impossible to portray the moral benefits conferred wherever flax-culture is introduced; particularly upon that part of the population which, being deficient in physical power, can obtain no permanent employment, and is a pest to society. Experience has proved that, without occupation, it is in vain to expect the reformation of the idle: upon this plea alone the Flax Cause has a just claim upon the support of the British public; and, when the plans described in this work are taken into the account, it is evident that all who are interested in, or dependent upon, agriculture, must perceive the necessity of adopting them.

Thus, by a combination of views and interests, the cultivation of flax, the fattening of cattle with native

produce, box-feeding and summer-grazing will be found admirably adapted to sustain the weight of an increasing population, and to counteract the baneful effects of a free trade in corn.

In the perusal of my book the critical reader will doubtless discover many defects; but the originality and utility of the work will hide a multitude of faults.

Some of my directions may be considered unnecessarily minute; but it should be remembered that I am answerable for the success of measures I so strongly recommend: nor do I arrogate to myself the merit of discoveries that admit of no improvement; on the contrary, my plans are open to investigation; and should they prove only forerunners of better things, I shall rejoice in having laid a foundation upon which others may build a more perfect system.



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REASONS
FOR THE
CULTIVATION OF FLAX.

AGRICULTURE and home commerce are the pillars of national prosperity: for when success attends the plough, the labourer and the artisan are employed, provisions and wares meet a ready sale, and the tradesman flourishes.

In proportion as Agriculture is depressed, all the dependent branches of trade suffer, for if the country spends nothing, the towns must needs languish. When the small rivulets are dried up, the main stream is lessened; and if the people consume but little of farm-produce, the springs of home commerce are consequently exhausted.

The consumption from the farm and the factory is regulated according to the rate at which the people are employed and paid; for they never cease to consume except when they cease to receive wages adequate to their wants. When the poor have the means, they are always the best customers at market, for they carry ready money in their hands, and take off the inferior meats, coarsest wares, and in truth most of those things which the rich will not have at any price.

The great drawback on agriculture and trade, at the present crisis, is a want of sale for ordinary meat, malt, and the inferior articles of manufacture, the consumption of which mainly depends on the working classes.

We need be under no apprehension of a market for our prime articles, when there is a brisk sale for the worst; but even the value of the superior is always enhanced as the prices of the inferior kinds advance.

Who would from choice lie on straw, drink water instead of beer, eat potatoes without bread or meat, or not provide himself and family with substantial clothing for the day and covering for the night? Certainly no one. The stinted meal of potatoes has however displaced that of bread; nakedness and destitution are the substitutes of decent clothing; while meat and beer have been too long unknown in the dwellings of the poor. The exceptions are indeed comparatively few. Their employers are placed in proportionable difficulties, and are constrained to practise a severe economy. Consequently the consumption of native produce is immensely hindered, and the best interests of the nation marred.

The largest tree receives support from the multitude of its fibrous roots, which, if injured, will cause the branches to wither and the trunk to decay; so, if the multitude of our labouring population cannot find employment, the branches of inward trade must wither, and the nation decay.

The wants of the poor are real, not imaginary. Thousands are, at the present time, reduced to the greatest and most aggravated distress; some from the total want of work, and others from not being sufficiently paid. The distress is national, and the cry for employment urgent. A deaf ear can no longer be turned to it. The cannon's mouth, it is true, backed by a well organised army, may calm our fears for a time; but the tide of an unemployed population must eventually overwhelm all.

Nor can the impending danger be averted except by the certainty of employment.

Constant work facilitates consumption, which is the main-spring of national prosperity. The Minister who shall obtain this national desideratum will be the best politician and the object of an universal gratitude.

It can, unquestionably, be found in the varied resources of this great country: a fact that has been repeatedly shown by many able writers. And it is somewhat difficult to account for the little effect produced.

The enfranchisement of copyholds, an act to drain and facilitate the exchange of lands, and the enclosure of wastes, would be of eminent service. These, and many other measures to improve the country and the condition of the people, have been

repeatedly laid before Parliament, and have mostly from various conflicting causes and interests been nullified.

The history of the world offers no parallel to the sufferings of the operatives in the manufacturing districts. Nor is the slightest hope of alleviation held out to them, except through the chimerical scheme of Free Trade, than which I fear nothing could more effectually perpetuate their miseries. Chimerical, because the Corn Law and the Tariff have already greatly reduced the price of provisions, without affording the slightest alleviation to the manufacturing distress.

It is only reasonable therefore to conclude, that if all restrictive duties were removed, the evil would be increased rather than lessened.

Large quantities of foreign agricultural produce have been admitted to the depreciation of our own, without any proportionable demand for British goods in return; and it is, indeed, much to be apprehended that a more extensive exportation would not be the means of materially advancing the condition of the operative. For it appears that competition in the foreign markets can only be carried on, with any chance of success, by a low rate of wages in this country.

Therefore, as foreign trade must be maintained by cheap bread, cheap labour, and oppression; no doubt can exist that it is the imperative duty of our legislators to promote agriculture and home commerce, which would flourish under high prices of produce and of labour, and render the state of the poor prosperous.*

* Since the publication of the above, the large manufacturing districts have assumed an appearance of the greatest prosperity; but the wages of the operatives are still barely sufficient for the common necessities of life, and entail a state of cruel vassalage that can never be remedied except by the abolition of the Factory System. The term prosperous, therefore, is delusive, because, the servant not being enabled to accumulate in proportion to his master, nor to save the smallest pittance for old age, must, at the termination of his labours, be cast, not upon his liege lord, as in former times, but upon the Poor Laws for support.

It is in vain that newspapers expose the wretchedness of the working classes. It is in vain that gentlemen, influenced by a spirit of love to their fellow-men, report the horrors they have witnessed. It is in vain that the interference of Omnipotence is invoked to provide a remedy, so long as the Satanic influence of the "Mule and Iron-man" used in the factories prevails against the representations of reason and humanity.

I could

Many elaborate statements have been written to show that the condition of our poor is much superior to that of the Continental; without any reference to the inferior condition of the foreign to that of the English gentleman. The rise of very many of the higher orders of society in this country may be traced from those flourishing times when the labourer and the artisan were employed at liberal wages. An impetus was then given to home commerce, which has been gradually subsiding in proportion to the reduction of wages; and now it is comparatively at a stand, in consequence of the extremely low and illiberal rate at which the working classes are paid. The inevitable result must soon be the fall of English gentlemen as well as of English labourers to a level with foreigners, and the designs of that party be accomplished which would delight to revel in the ruins of agriculture, and in the application of the sponge to the national debt.

It is true that bread and meat are cheap abroad; but it is equally true that the wages of the poor in general will allow them to purchase but little of either. In some parts of the world the spontaneous productions of the earth contribute largely towards the maintenance of the poor, as they may be had for the trouble of gathering. But the climate of this country will not allow our people to obtain relief from hedges and ditches.

Nothing can be more impolitic than the attempt to supply our population with corn, raw material, manufactures, or any articles made in other countries, that can be grown, manufactured, and made at home. We pay down hard money for these productions to foreigners, who never return a single farthing for anything produced from the soil and industry of this kingdom; but, on the contrary, they wisely employ it in the improvement of their own agriculture, in the erection of factories, and in rendering themselves for ever independent of England.

I could unfold cases of misery and destitution that would sicken the heart in the perusal. I could relate instances where the rising influence of Christian feeling towards the amelioration of these sufferings has been overpowered by the sordid passion for gain. But I refer to my 'Remedy for the Distresses of Norwich,' in the Appendix.

Between twenty-five and thirty millions of money were paid to foreign nations last year for grain and seeds of various kinds, hemp and flax, oil-cake, and manure, and manufactured goods, &c. &c., whilst the foreign demand for, as well as the home consumption of, our own manufacture, has most materially decreased. Hence the melancholy state of the operatives in the manufacturing towns. Had a few only of those millions been paid to British, Scotch, and Irish farmers for grain and provisions, the money would have circulated at home, and a portion of the benefits been conveyed to both town and country labourers; and we should have seen them usefully and happily occupied, instead of being idly and miserably immured within the walls of an Union house.

More fatal than the Tariff have the Poor Laws been to remunerating wages and home commerce.

The multiplicity of dependent people affords a number of workmen at a cheap rate, who will let themselves at any price, adapt their wants and necessaries to their wages, and when no more work is to be obtained, reluctantly seek an asylum in the workhouse.

Nine shillings per week for a productive labourer, with his wife and five or six children, is only a fraction over or under three farthings a meal for each—while single men wander about seeking work and can find none, who, rather than be incarcerated in the workhouse, where life is rendered a burden, will submit to such an abstinence from necessary food as barely admits of preserving vitality.

To these causes, mainly, are we to attribute the immense decay of home commerce; for it must be remembered the working classes form the great majority, and upon their well being depends the prosperity of the state; therefore till some expedients are adopted to advance their condition, the prospect of better times to the farmer, the tradesman, and the labourer must remain hopeless. For where is the manufacturer to find a market for his goods, the farmer for his corn, or the poor man for his labour?

The labourer or mechanic who is employed one day, and is the next plunged into that receptacle of human wretchedness, the Union workhouse, sinks into despair; there, separated from

his family, he listens to the debasing counsels of those with whom he is compelled to associate; and at last falls from the situation of being a creditable to that of a pernicious member of society.

In proportion as the people are miserable, their services can be obtained for any purposes. Hence the midnight deprivations, the commitments to gaol, and the expensive police.

It is the horrible practice of many countries to keep the common people in ignorance and in want, in order to make them pliant and to enforce subordination. In this kingdom, in this land of liberty and of Christian profession, one would hardly suppose that a policy so debasing existed. And yet how dreadful are the effects of those laws which reduce the poor to the greatest hardships, compel them to perform the severest labour, and to let themselves out at wages far beneath the sum required to purchase a sufficiency of the commonest necessaries.

We who receive an abundant share, and fare sumptuously every day, cannot fail to remember that our enjoyments are derived from the incessant labours of the working classes. Nor ought it to be forgotten that in the attempt to improve their condition, and to afford them a reasonable proportion of the common fruits of the earth, we at the same time advance our own interests, secure the stability of our present possessions, and perform the part assigned us by the Creator.

The efforts of the benevolent can never compensate for the lack of employment. The want of permanent employment is a hydra that feeds upon the vitals of our country, devouring and consuming her substance and reducing her by degrees to universal pauperism. As idleness is the root of all evil, so is employment the root of all civil, moral, and religious order. At no period of our history was there ever a stronger desire expressed to afford permanent occupation and to alleviate the sufferings of the people than at the present.

For this purpose the growth of Flax offers the prospect of a more speedy and permanent relief than any project that has yet been brought before the public. For while the crop is highly remunerative to the farmer, it affords more varied employment and multiplied benefits than any other production of the earth.

It is stated that five or six millions of money are annually sent out of this country to purchase Flax. Now, provided one-third only of this sum is paid for actual labour, it would be sufficient to obviate our present difficulties if circulated in promoting the growth and preparation of that important article at home. But there is another advantage to the British Farmer over that of the Foreign in the value of the seed for fattening cattle; which, without any other consideration, will amply remunerate; so that the work occasioned by this double crop will require all our spare hands, and at once put a stop to the cry for employment and the rage for free trade.

If Flax were grown upon an extensive scale in England, the number of hands required would be incalculable; not for a season only, depending upon the fluctuations of fashion, but for a permanency, because, as linen ever has been one of the most useful and favourite articles of wearing apparel, so will it continue to the end of time.

“Amongst the many, the multitude of questions that demand the attention of the British statesman and the British nation, the loud, the pressing, the paramount cry of the people for employment and for bread, still predominates. To this grand consideration all the rest—foreign war, domestic taxation, political discontent, are as dust in the balance.”*

“It is generally difficult to gain the public ear for inquiries into social suffering and disorder; the sympathy of the higher classes is at all times dull to tales of misery in which they do not share, and of peril from which they conceive that their station will exempt them. Yet the subject is one of which, to all orders of men, it is impossible to exaggerate the importance or the urgency. The social condition of the poorer classes—their physical sufferings and their moral deficiencies—their wants and their wishes—form topics of inquiry in the sight of which all party questions, all constitutional changes, all international policy, all colonial disputes, as such, sink into comparative insignificance.”†

* Norwich Mercury.

† Westminster Review.

These are amongst the most energetic and soul-stirring appeals of those who profess to see no hope of ameliorating the condition of the people, except from the resources of foreign lands. I have quoted them because I conceive that they are equally applicable to promote permanent employment from the resources of our own land, and perhaps may tend to ward off those fatal consequences which must inevitably accrue from the importation of an undue proportion of raw material for our people to manufacture, and of corn for our people to eat. For if such acute and powerful arguments can be advanced to aid a chimerical project, they must acquire a force infinitely greater when applied to the promotion of our own interests rather than to those of foreigners. And I cannot doubt that when despair of finding relief at home shall have given place to hope, these great and comprehensive minds will be devoted to the furtherance of those immeasurably important designs contemplated by the Flax Association, which, like a ship just launched, waits an outfit from the benevolent heart and liberal hand, that she may prosecute her voyage to the Haven of National Prosperity.

That the cultivation of so important a plant as Flax should have remained so long neglected, may perhaps be a matter of astonishment. For while the mind of man would vainly compass sea and land to obtain an alleviation of our national distress, the finger of an all-bountiful Creator points to our own soil as the source whence the remedy can alone be derived.

Flax is cultivated in some parts of England and Scotland, but with so little care and attention that it can only be used for the coarser articles of manufacture, and is not worth half the price per ton that is given by our manufacturers for foreign. The Irish were similarly circumstanced till they formed a society two years since to promote an improved system of preparation. They engaged Belgian instructors, have succeeded beyond their most sanguine expectations, and have now the gratification of seeing their countrymen employed in preparing and manufacturing a description of flax before unknown in Ireland, and for which immense sums were annually paid to foreigners. I was present at this Society's

meeting at Belfast, in Nov. last, and heard Mr. S. R. Mulholland state as an instance of the beneficial effects of the improved system, that the Firm with which he was connected had sent no less than 40,000*l.* of ready cash out of the country annually for the purchase of flax, but that in the present year they had not expended as many pence. In the emphatic words of this gentleman, I venture again to call upon my countrymen "to take advantage of what God and nature had done for our soil," and promote the growth of this important plant in England.

The cultivation of flax has engaged the attention of mankind, from the earliest ages, in almost every part of the globe; and has continued, to the present time, a source of profit to the cultivator and of employment to the people. Several lively allusions occur in the Sacred Scriptures. "The flax and the barley was smitten; for the barley was in the ear, and the flax was balled. But the wheat and the rye were not smitten, for they were not grown up." From this simple statement we discover the accuracy of the Mosaic account, for in England also flax ripens before wheat. Rahab hid the spies with the stalks of flax that were laid in order on the roof of her house. Now as a nice regard is paid to the order in which flax is laid to dry at the present time preparatory to scutching and spinning, doubtless hers was placed upon the roof for similar purposes. Many cottiers in Ireland grow small patches of flax in their gardens which they prepare and spin for their own private uses.

Solomon had horses brought out of Egypt, and linen yarn; the king's merchants received the linen yarn at a price. Job complained that his days were swifter than a weaver's shuttle. From these quotations we learn that flax was cultivated, prepared, spun into yarn, woven into linen, and considered an important article of merchandise in those remote ages. Indeed fine linen is frequently mentioned amongst the ornaments of the Temple at Jerusalem. "The Egyptians," says Belzoni, "were certainly well acquainted with linen manufactures equal to our own, for in many of their figures we observe their garments quite transparent, and among the foldings of the mummies he observed some cloth quite as fine

as our common muslin, very strong, and of an even texture," which proves that their manufactures must have arrived at a great degree of excellence. Pliny describes the different qualities of flax respectively produced by each country, with a particularity which argues that the manufacture of linen was already become an important branch of commerce to many nations. It appears that the produce of flax was first introduced into England by the Romans. But we may infer that the plant itself was not cultivated at the time of the Norman Conquest. Compared to the great demand for flax, its cultivation both in England and Ireland is almost nominal. The flax plant is scarcely affected by difference of soil and climate. It flourishes in the cold as well as in the temperate regions of Europe; in North and South America, in Africa and in Asia. In some parts of Russia the flax-grounds are as extensive as the corn lands; but in Belgium flax is cultivated with the greatest skill and success. The value of a flax crop is therefore no new discovery; the novelty consists in the attempt to introduce an extended and an improved cultivation of so valuable an article into our system of husbandry.

Considering the superiority of British agriculture, particularly that of Norfolk, it is astonishing that the real properties of flax should have been so little understood and so long neglected—in Norfolk too, where even the refuse of the seed, in the shape of oil-cake, has been for so many years more highly appreciated than any other food to fatten cattle. It is also wonderful that history affords no information of the cultivation of flax exclusively for the sake of the seed to fatten cattle, until the attempt was made by myself at Trimmingham. So little was linseed-cake appreciated about 80 years ago, that it was used in Holland merely as fuel: and it is only within the last year or two that the attention of the Irish has been directed to the importance of saving the seed; for they were always in the habit of throwing it with the flax into the steeping holes, not thinking the bolls, in which the seed is contained, worth pulling off.

Flax may certainly be termed a double crop; for while the straw of wheat is reduced to manure, the straw of flax is advanced to the most useful purposes and made into the most

elegant material. In Belgium it is called the "Golden Crop," in Ireland, the "Rent-paying Crop." Flax sown thin produces more seed and a less valuable fibre; if thick, less seed and a superior fibre.

As an agriculturist, I should say, that the first in importance is the seed, because of its properties, when made into compound to fatten my cattle; of the value of the manure for my land, and of the employment which it affords to my labourers. As a manufacturer I should undoubtedly say the first in importance is the fibre, because of the high price that I pay for it in a foreign country; the great and increasing demand for all linen goods; and the fund of employment that a large supply of home-grown flax would afford the manufacturing population.

"If," as the Rev. F. Blakely observed at the Belfast Flax Meeting, "gentlemen would calculate from the time the ploughman turned up the soil, in preparation for the flax seed, until the period at which the lapper decorated his webs with golden leaf, it would be found that about thirty different classes of society earned a livelihood in the cultivation and management of flax. And when it was considered that of these several might be aged men and women, or might be even children, many arguments might be adduced to prove the great importance of the growing of flax to the country. Whatever gave employment lowered the poor rate, and whatever lowered the poor rate was of advantage to all ranks of the community." Mr. Ross, M.P., also remarked, that "mouths increase faster than markets, and that it was their duty to make use of such means as were within their reach, to provide employment for the population. The time was arrived when all who live by agriculture were called upon to pay particular attention to it; and if there was one branch more than another that should engage their attention, flax was that branch."

To no party are we more indebted than to the Flax Improvement Society of Ireland; because from no other quarter could we have derived such a fund of information in so short a

time and at so little cost. We are also encouraged to expect the Irish merchants to visit our flax-markets so soon as we can produce an article sufficiently attractive. They desire to deal with us rather than with foreigners; and thus may we reasonably anticipate, through this fresh source of commercial intercourse, a reciprocity of incalculable benefits; amongst which none would be greater, I am persuaded from observation, than the introduction of British husbandry into Ireland. I will just observe that the most accurate information on agriculture might readily be obtained by deputations sent to England, who would be hospitably received by our enlightened and liberal agriculturists. The formation of numerous Farmers' Clubs, similar to those in England, would also tend greatly to promote the interests of agriculture in Ireland, particularly if correspondences were established between the Clubs of both countries, which could easily be effected.

Innumerable advantages have accrued from the establishment of local societies in England. I have read many of their interesting and valuable Reports. The North Walsham Farmers' Club ranks not among the least in enterprise and utility, of which many proofs appear in the neighbourhood. It would be superfluous to enumerate more than are contained in the following Report, abridged from the two Norwich papers, which it is necessary to record in order to carry out the design of this work.

NORTH WALSHAM FARMERS' CLUB.

THE annual meeting of this Society took place on Friday, October 28th. In consequence of the interest excited throughout the county by the new Compound for Fattening Cattle, and the attention which has been lately drawn by Mr. J. Warnes, jun., of Trimmingham, to the Cultivation of Flax in Norfolk, a large number of landowners and practical farmers assembled at North Walsham, to attend this meeting of the Club.

The exhibition was held on the grounds of the Rev. W. F.

Wilkinson, rector of North Walsham, where a large marquee was pitched and coppers erected for making Compound. Also samples of linseed, with flax in straw, roots, turnips, mangel wurzel, carrots, potatoes, were exhibited.

The show of stock was extremely confined. A few bullocks were shown by Mr. Warnes as proofs of the fattening properties of the Compound; and, as much difference of opinion was expressed respecting the weight, two were killed on the spot, viz., a Devon steer and a young home-bred heifer.

The following are the particulars of the cattle slaughtered:—The Devon bullock, purchased on the 8th of January, at 9*l.* 15*s.*; killed on the 28th of October following; weighed 58 stone 10 lbs. (loose fat, 8 stone 7 lbs.); value of the carcase at 8*s.* per stone, 23*l.* 10*s.*, from which, after deducting the cost price, and 8*l.* 11*s.* for compound, leaves a balance of 5*l.* 4*s.* with the manure, for turnips and grass, the real value of which was trifling, on account of the small quantity consumed.

The home bred was only eleven months old, and was purchased in May, at 3*l.* It weighed 29 stone 12 lbs. (loose fat 4 stone 2 lbs.), value of the carcase at 8*s.* per stone, 12*l.*, leaving a balance of 9*l.* for compound and grass; latterly it had a few potatoes and turnips, but no *milk* or any other food whatever.

The great points of attraction were the process for making the different compounds, and exhibition of flax from various parts of the county, with linseed of home and foreign growth.

The varieties of these productions gave rise to much animated conversation. It was generally agreed that the cultivation of flax for the intrinsic value of the seed would repay the cultivator; that in a grazing country like England, from which large sums are annually sent for foreign oil-cake, the growth of linseed on a limited scale must be highly remunerative. It is proved by the various crops which have been grown in the district, that in productiveness Mr. Warnes' estimate is borne out. It has been tried on all sorts of soils; on Mr. Cubitt's sandy loam at Witton; on Mr. Partridge's moor, at Hockham; on Mr. Warnes' stiff soil, at Trimingham; on Mr. Atkinson's clay loam, at Walcot; on Mr. Amies' and Mr. T. Allen's light soils, at Frettenham and Buxton. The pro-

duce where proved, is nearly the same, from five to six coombs per acre: Mr. Atkinson's exceeding six coombs two quarters, and the others above five coombs, which, considering many disadvantages, sufficiently realised the most favourable anticipations, and warranted a more enlarged cultivation of the crop.

As to the amount of employment which the growth of flax would create, it is not so easy to speak. But even if that difference only amounted, as Mr. Gower has stated, "to the difference between the price of foreign linseed and that of our own growth, and which would have to be paid out of the poor rate," it is most material. From Mr. Norfor's observations, it is fair to infer that the rippling and scutching of flax would give considerable employment to females in the day, as well as preparing it for market in the winter evenings. We gather from the Irish Reports and other sources, that it is not necessary for flax, either before or after steeping, to be immediately prepared for manufacture; on the contrary, that it is better for being stacked and kept; that its various modes of dressing would afford during the periods when labour is not rife—early in the spring and in the winter—considerable employment to those who would probably be otherwise receiving parish relief.

Having thus given as much information on the subject as our means have afforded, we must detail the proceedings which took place. It may be thought by some of our readers that we have leaned a little too much in favour of the suggestions Mr. Warnes has made. If we have done so, we feel that we have erred on the right side; for although the novel nature of the feeding, and the institution of the society for the encouragement of flax-growing, ought to receive the closest investigation, we still think that a proposition which has been carried to its present extent with so much perseverance, and involving such important results, should also be met by great encouragement, particularly when a part of the proposition has been proved to have so well succeeded.

About three o'clock the company collected from the various parts of the ground and assembled in the booth, to consider the desirableness of forming a society to extend and improve the cultivation of flax.

E. WODEHOUSE, Esq., M.P., was called to the Chair, and in opening the proceedings, said, if a knowledge of the subject respecting which the meeting had been convened was required in the chairman, he was not the person who should preside; but in common with every one present he felt that the cultivation of flax was a matter of deep interest, and therefore he would not detain the meeting with any lengthened observations of his own. He had taken the chair in obedience to Mr. Warnes' wishes, and would call upon him to state his views. (Applause.)

Mr. WARNES rose and said—I rejoice that the time is arrived to which I have looked forward with so much anxiety. I rejoice at finding myself surrounded by so large an assembly, in number far exceeding my most sanguine expectations. But, above all, I rejoice at beholding gentlemen, whose advantages of education, station, and circumstances, qualify them so well to take a comprehensive view of those plans which I shall have the honour of laying before them, and also to afford that vigorous assistance which alone can ensure success. Suffer not the obscurity of the individual addressing you to serve as an excuse for withholding your sanction and support. Remember that the greatest results have more often followed the exertions of the weakest advocates, than those from whom greater things were expected. Therefore, at least for once, let it be said that a prophet has honour in his own country. I stand not here to advocate any selfish claim, but to lay before you ideas which have occupied my mind for some months past, arising from the difficulties into which the agriculture of this country is plunged by the alteration of the corn-law and of the tariff, involving alike the interest of the landowner, the occupier, and the labourer. Sir, we are arrived at a crisis fraught with alarming consequences to the community, such as render it the duty of every man who has, or thinks he has, a remedy to propose, boldly to come forward and declare it. Upon this principle I venture to claim your attention for a short time. There are some things connected with the late enactments over which we can exercise no control; but there are others over which we most certainly can.

For instance, we cannot prevent the miller from purchasing foreign wheat—the baker from purchasing foreign flour—the merchant, barley—or the manufacturer and the mechanic, meat. But we can control the indirect purchase of those very articles in the shape of foreign manure and of foreign cake. I hold in my hand a pamphlet in which I have endeavoured to point out the way to become independent of foreigners for artificial food for our cattle, and manure for our land, to which I beg to refer you. It would be bad taste were I now to detain you with details which I trust you will read at your leisure. I do not expect that they will be followed all at once, but I believe that in proportion as they are adopted, the injurious effects of the corn-law and the tariff will be materially obviated. No one has a right to complain who will not refuse to purchase indirectly those articles, the direct introduction of which he so much condemns. But we are not now assembled to discuss the merits of the cattle-compound versus foreign oil-cake; our object is to take into consideration the desirableness of forming a society to extend and improve the growth of flax. For this purpose have these specimens been collected from various growers, principally between North Walsham and Norwich. They are placed before you in order that the discussion may in some measure be assisted by the practical illustration which they afford. There is nothing very striking in the appearance of those sheaves beyond their novelty. But when we enquire into their properties and the various uses to which they can be applied to the service of man, we are struck with wonder and admiration. The seed is called linseed, and is, of all food yet discovered, the most fattening when judiciously given to cattle. Even the refuse, as you are aware, is, when made into cake, of considerable value; and the oil, when mixed with white lead, surpasses everything else for preserving wood. The chaff will be found serviceable as manure, and as food for horses. I had some put on a small part of a field, by way of experiment, that was about to be sown with turnips, and was in all other respects treated as the rest of the field; the spot on which the chaff had been thrown was decidedly the best, and with respect to its value for cattle, I will read an account from this little

pamphlet, as it so fully corroborates my own experience: "I purchased an old and poor cow, the worst in the market giving milk, which did not exceed two quarts per day. I commenced with one bushel of the chaff, which weighed 31 lbs. : at the end of one week she was giving four quarts. I then gave her two bushels per day, and at the end of three weeks she was giving from eight to nine quarts per day, and continued to do so as long as she was fed on this kind of food, which was given morning and evening, steamed, with a feed of turnips in the middle of the day, and 2 lbs. of hay between each feeding. The animal became sleek, and she got into a good condition, but not fat. At the end of the sixth week she was fed, like the other cows, on cut hay with sheaf corn steamed with turnips, three feeds a day and hay between, when she fell off gradually from her milk to four quarts a day, which she continued for three months, and then got into good condition. It thus appears to me that there is nothing like flax-seed chaff for giving milk, it is so light, and contains so much of albumaceous matter." The way in which this and other documents relating to the growth of flax came into my possession appears so remarkably providential that I cannot forbear mentioning it. A society was formed in Ireland last year similar to that I wish to see established in this country. I had seen some extracts from its proceedings, but wanting more authentic information, Mr. Bacon, jun., kindly undertook to obtain it. Accordingly a letter was despatched to Mr. Skinner, the Secretary. That gentleman, however, had seen an account of our having grown so many acres of flax, and anticipating our lack of knowledge in preparing it properly for market, sent a small parcel of pamphlets and papers containing the required particulars to the 'Norwich Mercury' office, with a letter to the Editor, strongly advising the formation of a Flax Society here, and urging him to promote so desirable an object through the influence of his (the 'Mercury') paper. Now Mr. Bacon, jun. and Mr. Skinner were perfectly unacquainted with each other, and therefore it must at least be looked upon as a very singular coincidence that one gentleman should have been writing in England for certain papers and documents which the other was at the

same time engaged in forwarding from Ireland. Thus the parcel crossed the letter of application on the passage between the two kingdoms, and safely arrived at Norwich. This interesting occurrence affords a striking illustration of that warm-heartedness for which the Irish have ever been so famed, and is a further proof of the advantages to be derived from our correspondence with that friendly nation. It appears from the paper which I hold in my hand that the same assistance and information which the Flax Society of Ireland obtained at considerable expense from Belgium, may be acquired by us at much less inconvenience and cost. I will read it:—

“The term of the engagement of the Belgian labourers having expired, three of these men are about setting out for their own country; but we learn that some of them are so well pleased with Ireland that they are willing to re-engage with any party, for a month or two, who may require their services, on more moderate terms than those that induced them to come over.”—(Hear, hear.) There can be no doubt but that these men will readily come over to England upon the same terms as they accepted from the Irish.* Notwithstanding the immense advantages derived from the seed, cake, oil, and chaff, evidently the greatest centre in the fibre. There are only two specimens of flax on the table which I have not seen when growing, and mostly on soils varying materially in quality. The sheaf which I now take up was grown by the Hon. Mr. Rous of Worstead Hall, on land of first-rate quality, but badly prepared for sowing. The next is a sample from the estate of the Right Hon. Lord Wodehouse, at Witton. When I tell you that the land is barely worth eighteen pence an acre to rent, you can form a pretty correct idea of its quality; and yet observe here is an abundance of seed, and although the stalk is short, yet so exquisitely fine is the fibre that the eye can no more discern the finest parts when drawn forth than it could the floating cobweb. I hope that our noble friend and member of the North Walsham Farmers' Club will order another trial to be made on similar land next year, with the addition of some manure to the

* Two of the men referred to are now at work upon my premises.

soil, which was not applied by the occupier. I must now call your attention to the wrought flax, a specimen from my last year's crop. It was brought to the state in which you now see it in Yorkshire. Mr. Burton, from that county, paid me a passing visit last summer, to examine my crops of linseed with others in the neighbourhood. He expressed himself surprised and gratified at what he had seen, and strongly advised us to persevere in our attempts; and as a proof of his sincerity, he took back in the same steam-packet with himself a bundle of flax-stalks, had it prepared, and sent to this meeting for general inspection. I lately had some conversation with Mr. Pierce, a very intelligent gentleman, who is at the present time residing at Norwich, and is, I believe, an assistant tithe commissioner. From the observations made of our soil, and from long experience, he emphatically declared that we ought to turn our attention to the cultivation of flax, and, could he attend our meeting, he would strongly enforce the subject upon our attention. Gentlemen, possessing as we do a soil and climate equal to any part of the world for the cultivation of flax, and this crop being prized by foreigners so much above all others, and termed their golden crop, I can see no earthly objection to our striving for a little of that precious commodity ourselves, instead of allowing the Belgians to line their purses at our expense. There is one subject to which I have but slightly alluded, namely, to the employment which the cultivation of flax would afford the poor, than which a greater or more important object cannot engage the minds of men. The noblest epithet bestowed on man is that of Patriot; but can he be called a lover of his country who neglects the interests of the poor? I make not these observations to court popular applause—I disdain it—indeed how can I, in advocating the finding employment for the poor, fail of being benefited myself? If my advice is adopted with respect to the cattle-compound, I am sure of reaping a decided advantage in the higher price of corn. With respect to the growth of flax, I am sure for every shilling I put into the poor man's pocket, ten will be returned to my own. Useful and honest occupation for the labouring hand may almost be considered at this time the nation's desideratum. And yet I

learn that there are annually sent out of this kingdom from ten to twenty millions of money to purchase flax, cake, and oil, &c., all of which could be produced from the resources of our soil and from the employment of our own rather than foreign labourers. The Irish have established a society to promote and encourage the growth of flax; and it is difficult to imagine upon what pretence objections can be made to the formation of a similar society in this country, which would have for its object the advancement of our own interests through the employment of the poor. To accomplish so desirable an aim, our legislature have for years held consultations and established laws, all of which have failed. What they have laboured for in vain you have now an opportunity of effecting. Reject not the singular felicity of pleasing all parties, for, should our endeavours be crowned with success, our senators will rejoice to find themselves delivered from the endless fatigue of framing poor laws. The philanthropist will rejoice to see his countrymen emancipated from union work-houses, alike vexatious to them and burthensome to us. The Christian philosopher will rejoice to see the labouring man once again occupied in earning his bread by the sweat of his brow, according to the original and wise decree of Heaven; and lastly, how great will be the rejoicing of those innumerable poor who languish in idleness, in misery, and in poverty, for the want of that aid which it is in your power to grant.

H. C. PARTRIDGE, Esq., had the honour of moving a resolution, but heartily wished that it had fallen into the hands of some one else more able. They had all heard Mr. Warnes' clear and satisfactory statements, and which had relieved him, Mr. Partridge, from going into details.—He could have given little information on the subject under consideration. Mr. Warnes had given ample details respecting the growth of flax in that neighbourhood. The matter had been a great deal talked of and discussed: and they were all acquainted with Mr. Warnes' suggestions and statements. Everybody would allow that it should be an object of the farmer to increase his produce at the least expense. He (Mr. Partridge) knew no better way than by obtaining an ample and cheap supply of manure. Mr.

Warnes said that cattle can be fed at home without the heavy expense of foreign oil-cake. If a proper and sufficient supply of fattening materials could be obtained at home, it was most desirable. There had been a perfect glut of barley. From the new compound a greater proportion of manure could be obtained than at present. If every farmer grew linseed to mix with barley, his supply of manure would be greater than if he had to apply to a neighbouring merchant. As to the growth of linseed, they had seen the specimens that had been grown in that neighbourhood, and therefore there was no lack of information. He (Mr. Partridge) had his attention drawn to it by a paragraph in the newspaper. He immediately ordered a small portion to be sown in very bad land. One or two of the specimens of the produce had been exhibited, and, as far as Mr. Partridge's judgment went, it was a crop that would pay better than any crop of corn that could be grown. In conclusion, he moved

‘That as the soil and climate of England are highly suitable for the growth of Flax, it is resolved that a Society shall be formed to promote the cultivation of that important plant in Norfolk, having for its object the advancement of Agriculture, and the finding of employment for the poor.’

Mr. NORFOR seconded the resolution. He considered that they were deeply indebted to Mr. Warnes for having turned his attention to the subject. He (Mr. Norfor) had spent much time abroad, and had made particular inquiries into the Agriculture of Belgium, where flax was grown to a considerable extent. In the rotation of crops flax was introduced to a considerable extent, and was considered a valuable crop. In one part of the country in particular, women were to be seen in the day time at almost every door breaking flax, which in the evening they prepared and manufactured for market. If the growth of flax were introduced under a proper system, he saw no reason why it should not prosper in this country. In Belgium flax was grown for the double purpose of seed and fibre, but they considered that the flax was never so valuable as when it was pulled in the green state. When they pull the flax green, they take off the seed and ripen it in the sun. Taking the value of the seed at the present price, 25s., it must be a

profitable crop; but if the value of the flax were added it would make a considerable addition.

The CHAIRMAN then put the resolution, which was carried unanimously.

Sir FOWELL BUXTON, Bart., said that Mr. Partridge, in the course of his address, had stated that he was not possessed of information on the subject. He had also come there to listen to what passed and to learn. He was certainly very much gratified at what he had seen, and at what he had heard from Mr. Warnes, but he was not quite so much pleased as Mr. Warnes, when that gentleman had pointed out, how by the growth of linseed and the consumption of barley in the compound, the price of the latter would rise to fifteen shillings, from thence to eighteen, until it reached the good old times of a guinea a coomb. Now to a man who consumed about one hundred thousand quarters annually, this contemplated rise offered no very pleasing prospect. (Laughter.) But among the benefits and advantages to be derived from the growth of linseed, there was none in which he was so deeply interested as that which Mr. Warnes had stated with regard to its employment of the working classes. Upon that point he would not yield to any one.—There was no doubt but that employment was required for the population, and that it ought to be found for the labourers, by those who have the means and ability to promote it, and therefore he hoped, that taking the question on this ground, there would be found to be no difference of opinion as to the resolution he should move—"That as funds will be required to further the ends of the Society, it is resolved that a list be now opened for donations and subscriptions, and that the public be invited to unite in furthering the laudable objects of the Society." He (Sir Fowell) thought they were all under great obligations to Mr. Warnes, and the least they could do would be to provide the means by which the society was to be carried on.

W. BURROUGHES, Esq., said the subject had been so well discussed, that he should content himself with merely moving

the following resolution—"That the Society shall be conducted by a President, Vice-President, Committee, Treasurer, and Secretary."

Mr. H. PLAYFORD had great pleasure in seconding the motion, which was carried *nem. con.*

The CHAIRMAN said, in compliance with a suggestion from Mr. Warnes, he would recommend that the Meeting be adjourned to the Bear Inn. But he must avail himself of that opportunity of expressing, in common with every person present, the great pleasure he had experienced in hearing the statements made by Mr. Warnes, and he was gratified also with the corroboration these statements had received from others. The Hon. Gentleman was convinced that there never was a subject more deeply interesting nor more important to the welfare of this country, than the one which had been discussed. The present was a critical time for all engaged in agriculture. It seemed to him, that the proposed cultivation of flax held out a fair prospect of remuneration; and there was that above all other considerations, the prospect of removing the difficulty of providing permanent employment for all descriptions of labourers. He was convinced that it would provide permanent employment for them. He begged pardon for having made these remarks, and moved that the further consideration of the subject be adjourned till after the dinner.

The further proceedings were adjourned to the Bear Inn, where between five and six o'clock, about an hundred and fifty gentlemen sat down to dinner. A large number were unable to obtain seats at the table. All the speeches were directed to the objects of the Meeting. The utmost harmony and cordiality prevailed. The Hon. W. R. Rous accepted the office of President of the Society for the Growth of Flax; Sir T. F. Buxton, Bart., that of Vice-President; and Messrs. Gurney were appointed Treasurers. The selection of a Committee and Secretary was deferred till a sufficient number of subscribers were obtained.

The prominent part that I was induced to take in promoting the formation of the Norfolk Flax Society originated from my having incidentally sown an acre of land with linseed for the purpose of obtaining a substitute for oil-cake, not being aware that linseed and flax-seed were synonymous. But after I had discovered the real properties of the plant, and the employment that it would afford, I considered it an imperative duty to call public attention to the subject in every possible way, and I urged upon Mr. Rous the desirableness of holding the Meeting at Norwich; accordingly, he published the following letter, addressed—

To the Noblemen, Clergy, Gentry, Yeomanry, and others interested in the prosperity of the County of Norfolk.

MY LORDS AND GENTLEMEN,

THE precarious state of my health rendering it extremely problematical whether I shall be able to attend the first Meeting of the Flax Society on the 6th of January, I have begged the indulgence of the Press to circulate these few remarks as to the objects of this Society, and the grounds on which it rests its hopes of success.

The objects of the Society are—

Firstly.—By a partial alteration of the rotation of crops to increase the annual profits of the cultivators of the soil.

Secondly.—By the introduction of flax, the culture of which affords considerable employment to women and children, to add to the scanty earnings of the agricultural labourer.

The third object we have in view is to open a new source of employment for the manufacturers of the city of Norwich, and thus to relieve the distress so prevalent among the industriously-disposed poor of that ancient city.

Such, my Lords and Gentlemen, are the objects of this Society. It is for you to decide whether they are worthy of your support; for without that general support, of which we deem it worthy, this Society must cease to exist. It may

justly be expected that I should be prepared to show the grounds on which we presume that flax can be profitably grown in this county, for unless that point is established, of necessity the whole scheme must fall to the ground.

Now it has been proved by upwards of forty experiments in the neighbourhood of North Walsham, that the various soils and the climate of that district are peculiarly favourable to the growth of *seed*, for which alone the flax has hitherto been cultivated.—It may, however, be safely assumed that the cultivation of the plant, for the sake principally of the flax, will be equally successful; and here I may as well state that Mr. Atkinson, of Bacton, threshed out at the rate of six coombs two bushels of seed per acre, and that he has been offered forty shillings a cwt. for the straw when slightly prepared. We may in fact suppose good flax grown, and that we have only to find a market for it.—If we should unfortunately be disappointed in finding a linen manufactory established at Norwich, we have a ready market at Leeds or Belfast, where they can take all we can grow, and, if *properly prepared*, at a great price. All that we have to do is to overcome the difficulty of preparing the flax for the manufacturer, and this can only be done by employing foreigners, well versed in the art, to instruct our labourers in the mysteries of steeping, scutching, &c. Our object, therefore, at this moment is to raise a sufficient sum of money to bring over as soon as possible intelligent foreigners to insure our success. If, as I expect, the cultivation of flax should be on an extensive scale, a proportionably large sum will be required; but we must not be niggardly in furthering a grand undertaking, and I trust we may rely on the assistance of every patriot and of every philanthropist who can afford it.

In two years our labourers will be masters of the art of managing the flax. The Society may then dissolve itself, and those who have forwarded this scheme for the benefit of many, may joyfully remember that they have added one to the number of their good works.

In conclusion, my Lords and Gentlemen, I earnestly beg your attendance at the meeting on the 16th. You will then have an opportunity of hearing from that energetic and excel-

lent gentleman, Mr. Warnes, who has spared neither time, nor labour, nor money, in making himself master of the subject, a full account of the mode of growing flax in Ireland, a clear exposition of our own prospects if we adopt its culture, and much other interesting information on the subject.

I have only now, my Lords and Gentlemen, to apologise for the liberty I have taken in addressing you. Let my anxious desire for the public good plead my excuse.

I have the honour to be,
Your obedient Servant,
W. R. Rous.

Worstead House, December 6th.

NORFOLK FLAX SOCIETY.

THE First Annual Meeting of this important Association was held on Friday, 6th January, 1843. Our readers will recollect that this Society was first formed and established at North Walsham, under the Presidency of the Hon. W. R. Rous, and under the most favourable auspices. It was intended to embrace all the landed proprietors and farmers of both divisions of the county, and ultimately to be extended throughout the country, the object being of the greatest national importance, to promote the cultivation of a plant for the produce of which vast sums of money are annually sent abroad. It was well ascertained and demonstrated at the North Walsham meeting, that our own soil and climate are equal and perhaps superior to any in the world for the growth and perfection of the plant, and that its cultivation was generally more profitable than that of any other crop; all that was wanted to enable our farmers to fatten their cattle with native instead of foreign produce, and to supply our manufacturers with a raw material of which they consume such large quantities, being the application, at home, of the same skill and care in the cultivation and preparation of the crop that the people of the Continent, especially in Belgium, bestow upon it. At the meeting on Friday, the

attention of a large number of the leading Agriculturists of the county was called to the importance of the Cultivation of Flax, both as an article of manufacture and as producing a seed, the fattening properties of which for cattle have been fully tested. The preliminary proceedings took place in Spanton's Booth, on the Castle Meadow, where a numerous company of Noblemen, Gentlemen, and Farmers assembled to witness the method of forming linseed into compound to fatten cattle. A variety of crushing machines and steam apparatus for preparing the food were seen at work. A brick structure had been erected with boilers, steamers, troughs, &c., similar to what was exhibited at North Walsham.

Meeting in St. Andrew's Hall.

Soon after one o'clock a large number of gentlemen began to assemble in St. Andrew's Hall, and inspected the numerous specimens of linseed, flax in straw, and prepared flax, and also manufactured articles there exhibited, which were spread out over two long tables, in the centre of the hall.

About two o'clock the chair was taken by the Hon. W. R. Rous, President of the Society, who was surrounded in the orchestra by many of the first gentlemen in the county. The numbers in the body of the hall continued to increase till the termination of the proceedings; and amongst those present we noticed—

The High Sheriff of the County (W. H. Windham, Esq.), the Lord Lieutenant of the County (Lord Wodehouse), the Lord Bishop of Norwich, Lord Hastings, Lord Berners, Lord Colborne, Hon. and Rev. the Dean of Norwich, Hon. and Rev. Robert Wilson, Hon. and Rev. Armine Wodehouse, Hon. W. R. Colborne, M.P., Sir Wm. Beauchamp Proctor, Sir Edward Stracey, Sir Edmund Lacon, Sir J. P. Boileau, Edmond Wodehouse, Esq., M.P., Edward Fellowes, Esq., M.P., N. Bacon, Esq., F. Astley, Esq., Josias Stracey, Esq., John E. Lacon, Esq., H. J. Stracey, Esq., N. Micklethwait, Esq., W. E. L. Bulwer, Esq., F. W. Keppel, Esq., Wm. Burroughes, Esq., Colonel Mason, H. S. Partridge, Esq., T. R. Buckworth, Esq., A. Hamond, Esq., Champion Partridge, Esq., Captain Ives, Captain Cubitt, W. Norris, Esq., J. Scott, Esq., T. Dolphine, Esq., C.

Tompson, Esq., J. S. Muskett, Esq., T. G. Tuck, Esq., W. Gilbert, Esq., R. W. Parmeter, Esq., J. Postle, Esq., H. Francis, Esq., J. Warnes, jun., Esq., R. Wright, Esq., Rev. Canon Surtees, Rev. S. Jodrell, Rev. Dr. Sutton, Rev. T. P. Slapp, Rev. S. Pitman, Rev. J. Humfrey, Rev. G. Fauquier, Rev. J. Bulwer, Rev. E. Postle, Rev. A. Keppel, Rev. J. Holmes, the Mayor of Norwich, Messrs. Roberts, Atkinson, S. Abbot, jun., Allen, Bennett, Baker, Bidwell, Burton, Burrell, Barcham, G. Brown, Bygrave, Cubitt, Gower (Dilham), Gedney, Harvey, Garnham, W. Howes, S. Lock, J. Howlett, Barton, Moss, Gillett, Mayes, Hart, Land, Read, Rudd, Howes, Rust, and a large number of other most respectable and influential occupiers.

The Hon. W. Rous said—In opening the business of this Meeting it will not be necessary for me to enter into any lengthened details of the objects of the Flax Society: those objects have already been sufficiently explained in various letters in the county newspapers, and have also formed the subject of several articles written with great force and ability by the editors of our valuable journals. In a word, this Society seeks to add to the happiness and security of the community by advocating a plan which, if adopted, promises to be beneficial to all classes, and especially to the poorer classes, by providing for them increased valuable employment. Nor is it desirable that I should occupy your time by any details on the art of growing flax, or on the spirited mode by which we hope to attain immediate perfection in the cultivation of that plant. Those details will be much better explained to you by my friend Mr. Warnes, whose zeal in the cause of benevolence demands your esteem, and whose knowledge on this subject will doubtless obtain your serious attention. I shall therefore confine myself to a short statement of the exciting causes which produced the flax agitation. Firstly—the knowledge of the vast sums of money annually sent out of the country for the purchase of adulterated oil-cake, urged many gentlemen to attempt a discovery of some efficient substitute, the produce of our own soil. After a series of experiments by Mr. Warnes, which were afterwards severely and accurately tested by many gentlemen of the North Walsham Club, it was proved to demonstration, that a compound of

three parts barley and one linseed, or three parts beans and one linseed, was vastly superior to the oil-cake then in use. In fact, that, at last year's prices, 20*l.* spent in compound (besides the contingent advantages of home labour) was equal in its effects to 30*l.* laid out in cake. The next step was to grow the linseed. In that we also succeeded, and the object we then had in view was accomplished. Altered circumstances enlarged our views. The national voice demanded that food should be furnished to the consumer at a cheaper rate, and the legislature passed certain Acts of Parliament to produce the result. It would be foreign to the purpose of this Meeting, and an impertinent waste of your time, either to eulogize or to condemn those acts of the legislature. Sufficient it is for me to say, that those whose subsistence depends on agriculture were obliged to make these inquiries—How are we to preserve the same relative position in society as formerly? How are we to provide for our families, and how can we continue to employ the agricultural labourers at reasonable wages, which is our duty and which we earnestly desire to perform? Two modes present themselves. One mode is, to increase the quantity of our saleable commodities by an improved system of cultivation, and a careful selection of stock. Another mode, that which we venture to recommend instead of the first, is to substitute some crop of considerable surplus value, in lieu of some of those which are now losing crops. If the new remunerating crop requires increased labour in its cultivation, so much the better. If it furnishes a new channel of employment to the manufacturing population, it combines every possible advantage. The originators and supporters of this Society have tried many experiments, and have sought all the information within their reach, and have come to the conclusion that the cultivation of flax, both for seed and manufacture, is likely to be profitable to the grower and to give that increased employment which is so desirable. They, therefore, have summoned this Meeting for the purpose of recommending the adoption of flax-growing generally, and of calling on those who hold the same opinion as themselves to assist them in furnishing the means of employing competent instructors, so that we may grow flax in the greatest perfection, and turn it to the greatest profit.—Gentlemen, I thank you in the name of the Society

for the patient attention which you have bestowed on my feeble address—I thank you also in the name of the poor whose cause we especially advocate. May it never be forgotten, that without the just employment of the poor there can be neither happiness nor even security without stringent cruelty in any community. If, gentlemen, I have not made any apology for the inefficient manner in which I occupy the honourable post to which you have elected me, be assured the sole reason is, that I would not occupy your valuable time by unproductive truisms.

Mr. WARNES then spoke nearly as follows :—Mr. Chairman, my Lords and Gentlemen, allow me to read the resolution which I have the honour and privilege to move:—

“Resolved, that as the Norfolk Flax Society aims at the advancement of agriculture, the renovation of trade, and the employment of the people, it is the opinion of this Meeting that such laudable designs ought to be vigorously and immediately adopted by every Englishman who has the interest of his country at heart.”

The magnitude of these objects deserves a more able advocate. In no part of the kingdom is that advocacy more needed than in the county of Norfolk and in the city of Norwich. Gentlemen of the county and of the city, I claim your support at the first annual meeting of our Norfolk Flax Society, in order that the objects to which my resolution refers may be carried into effect, and the evils consequent upon an unemployed population be alleviated, if not entirely removed. The great and aggravated distress to which thousands of our fellow-creatures are reduced, has occupied the serious attention of all reflective minds in every grade of society,—in Parliament and out of Parliament, in Church and State, from the highest authority in the realm down to the humble individual who now stands before you. Did not the Queen, in her address to Parliament, express the deepest sympathy for her suffering people? and direct that measures should be adopted for their relief? Have not both Houses of Parliament taken these sufferings into consideration, and failed in the endeavour to

find a remedy? It is true, the Poor Laws afford a temporary relief, but they offer no cure for the national disease. The wound still bleeds, and will continue to bleed until the bread of idleness is displaced for that of honest industry. Gentlemen, I firmly believe that it is in our power to heal this wound by the simplest of all means, namely, the cultivation of flax. This will find employment for the people, and prove a remedy that legislators have failed to discover. And when we consider that too much land, money, and labour are appropriated to the growth of turnips and of barley, I think we may justly assume that a partial substitution of flax, upon these grounds alone, will be a very profitable crop to the farmer; and I expect that we shall hear no more of a starving population and of burdensome rates. The market for labour is over-stocked; and as the poor man has nothing else to offer, he is compelled to accept the lowest rate of wages. Under our present mode of husbandry his position can never be altered, nor his condition mended. But by an alteration of that mode in the way proposed, wages would advance, agricultural produce become of more value, and trade revive; because, with adequate wages, our labourers would be enabled to purchase those articles at our shops which are supplied by the manufacturers of Norwich, Leeds, Sheffield, Birmingham, Manchester, Staffordshire, Stroud, and many more. In this way would they contribute to the maintenance and support of many thousand artisans, whose only hope, in fact, rests on the prosperity of agriculture. These, in their turn, would become greater consumers of farm produce, and, by the united employment of town and country, the consumption of home produce and of home manufactures would be immense. Thus should we emerge from our present difficulties, and England live again! Gentlemen, let it be our endeavour to cherish that which every Briton ought to hold most dear, namely, his native land. Let us stir up her latent resources, and carry out those designs to which the Providences of God have so clearly directed our attention. The soil and climate of this country are evidently adapted to the growth of flax. The superiority of the seed to fatten cattle is placed beyond a doubt. The acreable value of linseed is equal to the average value of other

crops; but no calculation can be made of its worth when converted into cattle-food, both as respects the return in the shape of meat, and the productiveness of the land on which the manure is spread. With respect to the intrinsic value of the fibre, I am not prepared from experience to offer so decided an opinion. I have, however, taken some pains to obtain the best information upon the subject during the past two years. For this purpose, I lately went to Ireland, where every possible facility was offered me of examining the soil, the farmers' method of preparing flax for market, and every other process. From all that I saw, and from all that I heard, I cannot doubt our ability to grow flax of a quality equal to that of any part of the world. You have all inspected the numerous specimens of linseed and flax placed upon the table. The seed grown by ourselves is justly acknowledged to be superior to the foreign. Mr. Demann, of Belgium, now present, is quite surprised at some of the specimens which he has seen. Under proper tillage and preparation, his opinion is that we shall ultimately excel. I have placed before you the most ordinary as well as the most costly manufactured flax: though by no means in such variety as might be produced, yet sufficient, I trust, to convince you of the demand there always must be for the raw material. And when we consider that six millions are annually sent out of this country by our manufacturers to purchase flax, and millions by our farmers to purchase oil-cake, at an enormous profit to the foreign farmer, I think we need be under no apprehension about a market for our flax, or consumption for our linseed. The consumption of cord and twine in this city, merely to tie up parcels and packages, amounts to many hundreds a year; and from inquiries at some of the shops, I think that I might have said thousands. To supply this demand a large breadth of land would be required every year to be cultivated for flax. If so much be required for Norwich, I leave you to imagine how many acres would be needed for the great city of London, without taking into calculation the consumption of these articles in the rest of the kingdom. Some employment in this line may be found for our people; but instead of spinning twine, I trust the time is not far distant when the citizens of Norwich, famed for their

exquisite ingenuity, shall be employed in manufacturing the finer articles, and become as unrivalled in the splendour of their damask linen, as they now are in the elegance of their shawls. Then may we expect happier times for Norwich; and shortly have to congratulate the city on the impetus given to her damask trade by large orders from Windsor Castle. That this will be the case I have not the slightest doubt. For as the county of Norfolk intends to grow flax, the city of Norwich ought to manufacture flax; as Norfolk has formed a society to promote the growth of flax, Norwich ought also to form a society to promote the manufacture of flax. Gentlemen of the city, your forefathers, whose pictures so thickly adorn these walls, laid the foundation of many a noble structure that tended to advance the glory and interest of your ancient town. Let it be your endeavour to imitate their example; and though a failure attended the recent attempt to perform a good work in the erection of a yarn manufactory, you must not consider that attempt as altogether frustrated, so long as the building remains to be appropriated to the manufacture of flax. Gentlemen of the county, the cultivation of flax will, undoubtedly, occasion a partial revolution in our present system of farming; but this ought rather to be a cause of congratulation than of alarm; for the ship in which we have sailed so long is about to founder; let us, therefore, hail the present opportunity of embarking in a new one. To carry out the designs of the Flax Society properly and efficaciously, considerable funds will be required. I think that it will take at least four years before the country can be so firmly established as to do without the assistance of a society. The Irish Flax Society is not likely to close its labours in much less time; and, therefore, I do not see how we, who have every thing to learn, can conclude our operations in a shorter period. But amongst the numerous societies established in England, where is there one that offers the prospect of concluding its labours in four years? Considering the paramount importance of our society, none can be compared to it more than the shadow can be compared to the substance. Ours is the machine whose main-spring is labour, which sets all our institutions and societies in motion. Give but work to the poor, and from their earnings

will they continue to be, as they ever have been, the largest contributors to our missionary and other philanthropic institutions. For the want of employment the funds of many societies are falling off; and our churches and chapels are neglected, because the poor can neither pay their accustomed contributions, nor appear in decent clothing on the Sabbath-day. As a corroboration of this melancholy statement, I refer to the report of the City Mission, to your working Clergy, and to the excellent Minister of Catton New Church. Ought not this lamentable condition of our countrymen to stimulate us to relieve their wants? Wants that require no legislative enactments or government interference to alleviate; but a cordial union of heart and hand in the working of our Flax Society. Already the corn-law has reduced the price of bread; but of what avail is the cry of cheap bread to those who have no money to purchase it? And how is money to be had without employment? and where is employment to be found? Not in Norwich, where so many branches of her manufactures have, from different causes, become extinct. Nor yet in the country, where the produce of land so ill remunerates. It is only to be found in the cultivation of flax; this will speedily solve the difficulty, because it will find employment in the field and work in the city. The effect of this measure must inevitably tend to advance the rate of wages, maintain the value of British property, and preserve that proud position in the scale of nations which we have so long enjoyed. It will only require a few months to prove the accuracy of my predictions; for if the country will afford the necessary support, the seed will be sown in April, the flax will be ready to pull in July, and the crop, if need be, prepared for market in August. Hundreds of hands will be required to pull and harvest the crop, and thousands more in the winter months to thrash out the seed from the stalks, to crush and form it into cattle-compound, and to prepare the flax through all its stages for market. Methinks I see the flax-market at Norwich like the Thursday market at Tandragee which I lately witnessed in Ireland, and the farmers busied in selling flax, and putting the ready money in their pockets. It was a cheering sight, but not a very brisk day; yet flax to the amount of three thousand pounds was sold by farmers whose

occupations were all extremely small, not one of which, as I understood, exceeded fifty acres. Who can contemplate such a glorious return of national prosperity without feeling a desire to participate in the reality, and a determination to afford the means? To carry out this great, this all-important cause, the first step must be to engage a person of experience to teach our people the art of managing flax.—Mr. Demann is ready to undertake the office. We have about fifty acres of flax of last year's growth, which can be concentrated in some convenient spot, where pupils from various parts may be sent to acquire a knowledge of the business, and become qualified, on their return, to teach others; and, under the superintendence of the Society's agents, to manage the future crop. In the course of three or four years we shall produce flax of the first and most profitable description; and thus will be laid the foundation of a system, which, as years roll on, shall add to the wealth, independence, and prosperity of our country.

Sir EDWARD TRACEY came forward amid great applause, and seconded the motion. He said, that although in consequence of his infirm state of health he was not able to address the meeting at any length, yet he could not refrain from calling attention to the subject matter under discussion, which he considered to be of the utmost importance not only to the agriculture, but also to the manufactures of this country. (Hear, hear.)—As it was a very cold day he would not detain the meeting a great while; he would merely observe that flax-growing had been established and protected by statute in this country from the time of Henry VIII. and Elizabeth to the reign of George III. Till the middle of the reign of George III. flax was cultivated and assistance was given by the legislature to that cultivation; but about the middle of the reign of George III. cotton was introduced, and the consequence was, that flax vanished from use. And what had the cotton manufacture done?—It had subjected the agriculturist of this country to the payment of enormous sums of money for foreign food used in fattening cattle, and had beside transferred our trade to Russia, which country now supplies us with flax and hemp for cordage. Mr. Warnes had explained at length the skill

and ingenuity exercised in the manufacture of flax much better than he (Sir Edward) could be expected to do, and he would therefore not occupy their time any longer. The whole country was greatly indebted to the county of Norfolk—for what? why for turnips; and in the cultivation of that valuable plant now submitted to their notice, he trusted that the county would set an example to the whole of England, and that the farmers of Norfolk would come forward to promote the cultivation of flax, and thus be the means of saving some millions now sent annually abroad. He hoped the county of Norfolk would set a noble example that would be followed by the rest of the country. Let us (said Sir Edward) pride ourselves in being the leaders in this movement, and then huzza for the county of Norfolk. I shall not detain you longer, because Mr. Warnes has explained the whole subject to your entire satisfaction, and I beg leave to second his resolution.

The Right Hon. Lord WODEHOUSE rose and said, he had been requested by the President to propose a resolution—

“That as the soil and climate of England have been proved to be suitable for the growth of Flax, and as the mode of cultivation in Belgium is a system that increases the value of the plant to an incalculable extent; it is the opinion of this meeting, that the best possible means be adopted to carry into effect the designs of the Norfolk Flax Society.”

The Noble Lord continued—I should be most unjustifiable if I detained you at any length. I can promise you that I will make only a few remarks on the subject under discussion. I confess to you that I have devoted little of my attention to this subject, but I have heard enough and read enough to be convinced of its great importance in every respect, not only in giving increased and permanent employment to the poor, which is the chief consideration, but also in regard to the cultivation of flax as a most valuable crop, and perhaps as much as any thing supplying a cheap manure, thus being calculated to save large sums of money. But the only subject I wish to urge is this,—that the whole county should adopt the cultivation of flax systematically; that it will be advantageous to have many local

societies; that the county be formed into districts, but not too many of them, to follow up the plan suggested by Mr. Warnes.—(Hear, hear.)—We are greatly indebted to the President of this Society, to Mr. Warnes, and to all who have interested themselves in this matter, for the great pains they have taken in bringing the cultivation of flax to the perfection it is about to be brought to. I sincerely wish them success, and trust that their designs will be fully accomplished. I hope that no time will be lost, and that funds will not be wanting to carry out the great designs of this Society to perfection. I will not trouble you further.—The Noble Lord sat down amid great applause.

The Hon. and Rev. R. WILSON said—I rise to second the resolution moved by my Noble Friend. When it was first suggested that I should do so, I felt a difficulty in agreeing to it, for I felt on this subject I was quite ignorant; but on inquiry I found that we were likely to be all learners, and should not be expected to offer you information upon it; I therefore no longer hesitated. When I considered the object of this Society, several things induced me to believe that it would be of the greatest advantage to this county, and to the country generally. If we take up extensively the cultivation of flax, we shall be enabled to supply the markets and manufacturers with that article. I hope this will induce a better feeling between the manufacturers and the agriculturists. We have been grieved to see a considerable degree of ill-feeling between the parties. It appears as if there were a jealousy between them, each thinking the other has too great a share of the profits of business in this country. I hope that by a more intimate connexion between them as flax-growers and flax-consumers, this ill-feeling will be removed. I have no doubt that, by the growth of flax and by the use of the seed in fattening cattle, we shall be enabled to retain in this country a great amount of capital, which we have been compelled to send abroad in the purchase of oil-cake. I have always felt a strong disposition to support all agricultural societies, for many reasons. By an improved system of agriculture we may be enabled to produce as much corn, probably, as we may require for home consumption,—thus making our Old England inde-

pendent of the crops of other countries and climates for the daily supply of that necessary article, corn, required for subsistence : and I think that, by the cultivation of flax, we shall also be able to produce animal food for the market at a lower cost to the consumers, and we may thus see the consumption of meat introduced more into our cottages. That, I think, will, to a great extent, increase the comforts of the population of this country. Allow me to state another reason for promoting the growth of flax—a reason which appears to me a good ground for contributing to the support of this Society, and which induces me to hope that it will receive general encouragement : I mean the object of providing increased employment for the population. If we can promote the cultivation of any crop which will at once remunerate the occupier of the soil and afford increased employment for the population, that system should be adopted, as being of the greatest advantage to this country. For these reasons you must see with how much pleasure I second the resolution.

H. C. PARTRIDGE, Esq., came forward and said, I have the honour to move a resolution by permission of the Chairman, but I will not trespass on your time by treating on matters referred to by Mr. Warnes and by the other gentlemen who have addressed you. All who had the pleasure of being at the meeting at North Walsham, and those who have seen the specimens of flax exhibited this day, can have little, if any, doubt that the soil and climate of this country are suitable for the growth of that crop, or that it can be beneficially cultivated. The crop is not only beneficial to the farmer as a crop by itself, for you will see that it becomes, by proper cultivation, a most valuable crop ; but in regard to the seed also, which has been proved will be a good and ample means of fattening cattle, and as affording a plentiful supply of manure for the land. (Hear, hear).—The growth of flax should not only be regarded for the value of the fibre and seed, but also as a means of benefiting the land, for no one will doubt that the farmer will use a plentiful supply of what he grows himself, and therefore the landlords will not object to it. No one will put his hand into his pocket for that which he can himself produce on his own

land. These are not the only benefits to be derived from the cultivation of flax. What to every good heart must seem most desirable, and must rejoice at is, its providing employment for the poor. You have heard of flax being manufactured in this county, and this must employ a great number of hands; and there can be no one who is not delighted that a profitable means of employ for the poor has been discovered. I feel sure that I need say no more to recommend the cultivation of flax, but as I have been alluded to by Mr. Warnes, who has shown a sample of flax in straw, grown on poor land, I wish to say that what Mr. Warnes has stated is perfectly correct in regard to the land being almost worthless. The land from which it came is of the worst description, as it has never been manured, and has been generally under water. I hold in my hand a specimen of flax produced from similar straw, and this has been produced by some men in the parish of Lopham, and according to what a gentleman present has stated, it is worth from 55*l.* per ton. This would buy the land many times over. There can be no doubt that the growth of flax must pay better if cultivated according to the best rules and on the most modern principles. There can be no doubt that this is done in foreign countries. The best method should therefore be adopted at the outset, as it will be of no use to go on blundering from one error to another. The object of the Society will be best carried out by employing competent, able, and efficient instructors, those who fully understand the business; and it is therefore proposed to engage a competent person to give instruction in the various details. I will, therefore, move—

“ That as the objects of the Society will be best promoted by the employment of a competent instructor in the growth and manufacture of flax, a fund be raised by donations and annual subscriptions for that purpose.”

E. WODEHOUSE, Esq., M.P., in seconding the motion, did not intend to enter into the subject at any length. Having received a letter requesting him to ascertain, by application to the Board of Trade, the amount and real value of foreign oil-cake consumed annually in this country, he had written to Mr. Gladstone for information on the subject, but in consequence

of his being absent from London when the letter arrived, it was impossible that an answer could be obtained on that day. Mr. W. expected to receive it in a day or two, and would take care to have it sent for publication in the county papers. He could add, both with reference to himself and colleague, that nothing could give either of them greater pleasure and satisfaction, than being instrumental in promoting an object of such paramount interest, under the circumstances in which the agriculture of this country was placed.

The Right Rev. the Lord BISHOP of the Diocese said, he had been requested to undertake the pleasant duty of moving a vote of thanks to Capt. Rous, for the able manner in which he had filled the chair on that important occasion, and for giving so much of his time in promoting the objects of the Society, to improve the agriculture of Norfolk for the benefit of all concerned therein. His Lordship could not pretend to give any opinion on the important subject submitted to the consideration of the meeting. This only would he say, that all experiments in agriculture, especially those connected with science, should be encouraged to the utmost extent and in every possible way. His Lordship would cordially acknowledge himself a friend to experiments. Ninety-nine cases out of a hundred might fail, but if one experiment answered its purpose a great object was gained; and in science there was this advantage, that if an experiment failed in one instance for any purpose, there might be gain in another. It should never be forgotten, that there was not a single fact or experiment that could be thrown away, for what failed in one point might be gained in another. Thus in regard to the cultivation of flax, suppose it should be found that flax exhausted the soil, and this, the Lord Bishop understood, was the principal objection to its cultivation; yet, in this age of science and experiment—in this age, when Chemistry was brought into constant operation, how did they know that they might not be led to some more important facts, the knowledge of which might tend to improve the nature of the soil, and introduce new manure that would prevent its exhaustion? If they failed in producing flax in its utmost perfection, they might gain in manures.

Therefore every farmer and every person interested in agriculture should try the experiment, looking only to present advantage. On these grounds, said the Lord Bishop, I return thanks on behalf of this meeting to Captain Rous, and most heartily do I wish success to any experiment whatever, that may tend to promote the agriculture of Norfolk and the interests and advantages of the lower orders. (Applause.)

The Hon. W. R. Rous begged to return thanks for the handsome compliment, and particularly to the Lord Bishop for the manner in which he had proposed the vote, and could assure him that there was no occasion on which he (Capt. Rous) would so gladly receive the compliment, especially from one in his lordship's station, as head of the Church in this district. He believed the cause in which they were all engaged was not merely for the benefit of landowners and tenants, but also for the interest and advantage of the poor; and when he saw the head of the church in this diocese, with the Dean and others of the Clergy present, coming forward to support the Society, he could not help thinking that their presence and sanction was an important recommendation. (Applause.)

The meeting then dispersed, and I thought that I had been the happy instrument of laying "the foundation of a system, which, as years rolled on, should add to the wealth, independence, and prosperity of our country." But the foundation itself was already being undermined; and I soon experienced the disappointment too commonly inflicted upon the advocate of "a good work." For, on the following morning I discovered that my chief corner-stone had been removed from its place, and that I could neither build upon, nor restore it to its former position. That is to say, the Hon. Mr. Rous refused to carry out the principles upon which the Norfolk Flax Society was formed, and in which he had taken so conspicuous and praiseworthy a part.

We met to form a committee of management, assisted by the Hon. and Rev. Robert Wilson. The first proposition was, that I should accept the office of secretary, at 50*l.* a-year,

which I refused, offering my services gratuitously, and, as honorary secretary, to co-operate with a committee composed only of gentlemen of intelligence. I required, as the first step, according to the recommendation of Lord Wodehouse, "that branch societies should be formed, in order that the whole county might adopt the cultivation of flax systematically, and contribute to the funds of the parent society." Upon this, my original design, as will be seen by referring to the speech of the noble lord, I grounded my hopes of success, knowing that it would be impossible to introduce flax-culture extensively without branch societies, and funds to defray the expenses of instruction.

An individual more celebrated for conceit than for good sense, observed, that "If farmers were to reap all the benefits that I promised, they were not entitled to pecuniary assistance for instruction, and that subscriptions were therefore unnecessary." Mr. Rous also opposed the extension of the Association, wishing to confine its operations to the immediate neighbourhood of North Walsham.

It was in vain that I urged the dishonourable position in which we should both be placed with all who had taken part in the proceedings of the previous day. It was in vain that I warned him against the expending of money in a locality that was subscribed expressly for the county. In vain I referred my ardent supporter of yesterday to his early investigation of my plans, and to his intimate knowledge of every circumstance connected with my advocacy of the Flax Cause: to his letter addressed to the "Nobility, Clergy, Gentry, Yeomanry, and others interested in the prosperity of the County of Norfolk;" and to his speech so lately delivered in St. Andrew's Hall.

These, and many other arguments, I employed to induce Mr. Rous to resume his original position, I repeat, in vain.

The Hon. Gentleman had, unfortunately, over-night, fallen into company prejudiced against the flax movement, whose suggestions and influence over a nervous frame and vacillating disposition, operated too powerfully to be counteracted by my remonstrance.

Subsequently, the President requested me by letter to con-

vene a meeting of the subscribers, for the purpose of proceeding with the business of the Association. Accordingly, the day was appointed, and a committee formed, which I pronounced too inefficient to succeed; and therefore desired that Sir John Boileau, Bart., John Lacon, Esq., of Ormsby, and Mr. Lemon, of Whitwell, should be added to the number;—gentlemen whose philanthropy and ability had been proved on various public occasions.

Unfortunate in my endeavour to obtain this acquisition, as in everything else that I proposed, I still resolved to carry out, if possible, the designs of the Society, with the very feeble coadjutors appointed me; with what success the following correspondence will best elucidate. Nor will Mr. Rous complain of its insertion, but rather feel grateful for my forbearance in not having added the remainder.

Wednesday, 8th March.

MY DEAR SIR,—I was truly sorry to hear that no progress was made last week by the Committee in the labours of the Society; and more so, because the check arose from some difference between yourself on the one hand, and the rest of the Committee on the other hand, as to the proper mode of conducting the business of the Society; and particularly with reference to the expenditure of the funds of the Society.

I do sincerely hope that you are free from any unfounded impression that the Committee undervalues your honourable character, or the high services which you have rendered the public. You may be assured that every individual of that Committee duly appreciates your labours.

Let me beg of you to take it into your calm consideration that the Committee has been regularly appointed for the sole management of the business of the Society and of the Society's funds. The Committee is responsible to the subscribers for every shilling expended; it is therefore but reasonable that it should be the sole authority for contracting debts.

On all points connected with the business of the Society, I am certain that the Committee will gratefully lend you a willing ear, and will give all the weight to your recommendations

which is due to the zeal you have shown in a good cause, and to the information you possess. For myself, I most earnestly hope that you will consent to assist the Society as far as you can in accordance with the necessary duty of the Committee.

Pray do not take it ill if I remind you that an individual, however talented, can do no good alone; but only through the confidence which others repose in him. If the farmers near North Walsham had not proved your experiments, all your writings would have been in vain. If the landowners had not backed your proposal for a Flax Society, you might have talked for everlasting to empty benches. What could Cæsar have done without troops, or what could the Duke of Wellington have done without the support of the government? And although the troops would have done less without their generals, the generals would have done nothing without their troops.

You are now in this position. If you act in unison with the wishes of the *whole Committee*, you can do a vast deal of good to the country, and you will have a further claim on public gratitude; if you withdraw your services you will obstruct for a time the progress of the Society, and diminish the obligations we owe to you.

I have written thus candidly, both from a regard to yourself, and from a deep interest I feel in the welfare of the Society.

I remain, your's truly,

John Warnes, jun., Esq.

W. Rous.

March 10.

DEAR SIR,—Allow me to thank you for your friendly, cautionary, and very interesting letter; and also to beg that you will accept my apology for troubling you with an answer, as I shall so soon, I hope, have the pleasure of meeting you at Norwich.

In withdrawing from the Committee of the Norfolk Flax Society, nothing was further from my intention, as I repeatedly avowed, than to withhold my assistance, or the slightest particle of information that I possessed, from the Society. Nor had I any desire whatever to control the funds of the Society

beyond the repayment of certain incidental expenses of a trifling nature that might be occasioned in the daily working out of the business with which I was intrusted, and that could not be foreseen on the committee-days.

This discretionary power was denied. I then made several propositions to the Committee, in order to ascertain the real position in which I was placed.

1st. That advertisements should be sent to the Norwich papers, informing the public when, and how, information was to be obtained.

2ndly. That printed directions should be dispersed in the form of circulars, and others also, to invite gentlemen to join the Society.

3rdly. That, as Lord Wodehouse had recommended, according to my plan, as you will doubtless recollect, the establishment of local societies, I proposed that the attempt should be made; and that, in case it succeeded in augmenting the funds of the Society, the expenses incurred should be allowed. For instance, if 50*l.* were obtained at the cost of two or three, that sum should be allowed out of the 50*l.*

To these propositions I received a tacit negative, except from Mr. Wilson, who said that he would pay the advertisement out of his own pocket, rather than authorize the incurring of any expenses.

Thus bound hand and foot, justice required that I should be set at liberty, in order that I might act the part of an independent friend.

With respect to your admirable similes, pardon my observing that they do not exactly apply to me; for, instead of the general of an army, I am the pilot of a ship, of which you are the captain.

While steering the vessel through rocks and quicksands, your crew desire me to alter my course, and submit to their directions. I warn them of their danger; but they still persist. I therefore resign the helm with honour, lest I should be involved in the disgrace of reducing the ship to a wreck.

I have the honour to remain,

Your obedient servant,

The Hon. W. R. Rous.

JOHN WARNES.

The reader who may be disposed to trace the origin of the flax movement, will discover, in the rise and fall of the Norfolk Flax Society, much food for serious reflection. Those who may be inclined to regard this narrative as a digression, must be reminded that I was maligned in quarters where I had no access, but where the above letters will be the medium of conveying my refutation.

All parties, however, will agree in condemning the policy that excluded me from the Norfolk Flax Society, who alone was able to conduct it; in proof of which, justice demands a comparison between my present flourishing flax establishment at Trimingham and the dying embers of the Norfolk Flax Society, best conveyed through the following letter addressed to the editor of the 'Norfolk Chronicle':—

SIR,—Several years have elapsed since the meeting of a society, that I had been instrumental in forming, took place. It was called the "Norfolk Flax Society," and was held in St. Andrew's Hall, Norwich.

Present were the Lord Lieutenant and the High Sheriff of the county, the Bishop of Norwich, with a large assembly of nobility and gentry.

I had the honour of moving the first resolution, to the effect, that *flax-culture, as a means of employment to the poor, ought to be vigorously promoted by every true lover of his country.*

The success of my advocacy, on that memorable day, was of short duration: for, in less than twenty-four hours after the meeting separated, a cloud, charged with mischief, arose to mar the bright prospects that I had so recently depicted.

Eventually, I resolved to pursue alone that path, which I in vain pointed out as the only way to success.

The cloud is now removed; my work complete; and the unobstructed sun of prosperity shines upon the flax cause; the two main points that I endeavoured to enforce, viz., profitable employment to the poor and reduction of rates, being clearly established.

I now invite all thoughtful, prudent, and philanthropic persons to visit Trimingham, in order that they may see how far I have carried out the spirit of my resolution, and witness

the realization of the above statements, with the happy effects of constant work at adequate wages.

They will also discover that if flax had been cultivated to the extent, and in accordance with the plans I recommended, every parish in the county might, at the present time, have been rendered as free from rates as Trimingham; where one quarter's poor rate only, of the past three, at 3*d.* in the pound, has been required for the support of the infirm, and for Union charges: all hands being employed in dressing flax that would otherwise have been maintained in idleness. As a proof, Mr. Brown, who has greatly contributed towards the elucidation of this subject, left his farm at Michaelmas, engaged another at Rackheath, and took his flax with him. In consequence, several young persons were thrown out of employment; some of whom were lately obliged to take refuge in the work-house, where they must still have remained had I not received them into my flax establishment.

To remove all prejudice would be to alter the construction of human nature: a thing impossible! so innumerable are the secret springs of opposition. But, justice to the poor, whose cause I advocate, and for whose sake the Norfolk Flax Society was formed, demands the strictest investigation. I would therefore just observe, that the system of preparing flax for market is reduced to so great a certainty upon my premises, that I am now able to afford assistance to any part of the kingdom; and that, under the instruction of Belgians from the celebrated Courtrai district, young men, women, and children have become expert flax-dressers, earning from 3*s.* 6*d.* to 10*s.* per week. For instance, the wages of Thomas Siely, aged 13, exceed, upon the average, 6*s.* a week.

In conclusion, allow me to subjoin the copy of a letter, addressed to a nobleman on another part of my advocacy, of the utmost importance to the agricultural interests of the country; and to say that I this week sold seven bullocks, fattened according to the system recommended, from the resources of my own farm, that paid 77*l.* for less than six months' keeping.

MY LORD,—The people in this neighbourhood were once as stubborn and as stiff-necked as those who inspect your bullocks,

nor would they acknowledge the superiority of the compound-feeding system, till they had themselves reaped the profits I described. Now, they are a pliant, communicative, and I wish I could add a grateful, race.

But I am richly rewarded by the testimonies of an extensive and enlightened correspondence; and it is with pleasure that I answer your lordship's present inquiry. I wish, however, first to observe, for the instruction "of those parties who admit that your bullocks are doing well, and who will not allow the cheapness of the food upon which they are fattening," that linseed can be purchased at less money per ton than the best oil-cake.

For instance, I was offered on Saturday at Norwich linseed at 43s. per quarter, weighing 30 st., while oil-cake was 11l. 10s. per ton. Now, where farmers are so prejudiced against the new system as not to perceive the superiority of the pure seed over the refuse formed into cake with all kinds of rubbish, no arguments can produce a contrary conviction; and they must be left, till compelled by circumstances, like many in Norfolk, to try the experiment.

Your lordship will discover by the above prices, that linseed and cake are about 1s. 5d. per stone each; and that, if a compound of barley and linseed is made consisting of $\frac{1}{4}$ seed and $\frac{3}{4}$ barley at 9d. per stone [at which price thousands of quarters may be purchased], it will amount to 7l. 7s. per ton, exclusive of the water; but, when that *all-important* ingredient is incorporated according to the receipts in my book, the price will be reduced to 45s. per ton; and those who adopt only this part of my system, obtain five tons and a half of the *incomparable cattle-compound* at the same sum which others give for a ton of comparative rubbish.

I do not say that the same effect will be produced from a ton of compound as from a ton of cake; but I know of no instance where the superiority of the former has not been acknowledged, without taking into calculation the advantages derived by consuming so large a proportion of native produce.

My Lord, I thank you for having instituted an inquiry into this subject, which I should not otherwise have criticised so minutely, and which I shall expect to turn to some further use.

Hoping that I have succeeded in solving the problem con-

tained in your Lordship's note, I have the honour to remain,
your obedient servant,

JOHN WARNES.

Feb. 16th, 1846.

It is not my intention again to enter the lists of controversy, and, in closing this more arduous part of my labours, I am abundantly gratified by the many expressions of benefits conferred, by the glorious prospects for the future, and by a mind conscious of right.

Hoping that this letter may find a place in the columns of your paper, and in those of every patriotic journal in the United Kingdom,

I remain, Sir, your obedient servant,

JOHN WARNES.

Trimingham, Feb. 17th.

Candour must now admit that, if I could achieve so much by unassisted effort, it is clear that, had I been supported by the funds of the Norfolk Flax Society and a patriotic committee, every parish in the county might have been similarly circumstanced with my own; and that, if Mr. Rous was justified in referring the "nobility, gentry, clergy, and yeomanry" to the vehement opposition overcome at North Walsham, I am equally entitled to direct their attention to the victory I have obtained over an opposition far more inveterate and systematic.

I fought for God and for my country; therefore I glory not, except as the instrument of unfolding a system that will enable the poor man again to live by the sweat of his brow, according to the original decree of Heaven; and the rich man to confer upon him the greatest of all earthly blessings, constant work at adequate wages.

If, as Mr. Burn shows in his letters on "Home Colonization," the forty-six millions of acres now in cultivation are not sufficient to maintain the population, there are millions yet uncultivated that may be increased in value five thousand fold. It appears that there are forty six millions and a half acres of land in cultivation, and nearly thirty-one millions uncultivated: sixteen millions were reported by the Emigration

Committee to be profitable lands. Nearly the whole of the waste land in Ireland is reclaimable; three millions of which, that are equal to five millions of English acres, can be brought to produce a rental of 1*l.* per acre, at an outlay not exceeding 10*l.* per acre. "Thus," says Mr. Burn, "in the cultivation of the land, Sheffield and Birmingham must send their spades, their pickaxes, and their draining tools; the wheelwright must find ploughs, harrows, and carts; the iron-founder must supply the plough-coulters and the axletrees; the saddler must put on the harness; Wolverhampton must supply its chains, Walsall its bits and ornaments; the carpenter must put up the gates with tools from Sheffield, and hang them with the hinges and padlocks of Staffordshire; the hedger and ditcher who enclose the ground, and the ploughman who brings it into cultivation, are clothed by Stroud, Manchester, and Leeds; their hats come from Newcastle-under-Line, their half-boots from either Northampton or Stafford; they take their breakfast out of a basin furnished by the Staffordshire potteries; Sheffield finds the knife, Birmingham the spoon; the merchant traverses the ocean to bring their coffee and sugar; the engineer finds a coffee-mill, in which the turner furnishes a handle," &c. &c.

"The cultivation of the waste lands would undoubtedly subsist our paupers, repeal the poor rates, and enable the cultivators to afford provisions at such a price as would enable our manufacturers to compete with foreign nations, without ruin to the agriculturist, the government, or the public. Certainly no remedy could be more injudicious than the clamour recently raised for the importation of wheat, as though we could draw none from our native soil. Even without making the attempt, we set ourselves down for ruined without the aid of importation. Like Rome, we conclude that we must find another Egypt to supply us with wheat. Why, the land of our fathers, which has fed us more than a thousand years, is now concluded to be ruined by an overwhelming population, which, by the last census, is under twenty millions! and a free importation, which would throw all the land in England out of cultivation, is said to be the only remedy! No wonder such an awful remedy should meet with a direct negative by the

discerning few: for the opulent, who alone could purchase, would be the only persons who could live; all other classes without money would starve; and the former, who would soon find there was no public, would quickly be placed in the like predicament."

The tenor of Mr. Burn's letter is to show that the cultivation of a portion only of the waste lands might be made to yield infinitely more than would be sufficient to maintain all our pauper population, repeal the five millions of poor rates, and enable the manufacturer to become a successful competitor in the foreign market.

Admirable as are the sound and practicable propositions of this true lover of his country, I must think that the plan of cultivating flax offers a relief more particularly suited to the present exigency than any other; because wherever linseed is sown, in less than four months, the redundant population might be employed in preparing the crop for market. So immediate would be the relief afforded! I therefore advise all whose incomes depend upon farm produce to grow a small quantity this spring, in order that they may acquire some experience in the management of the crop. The seed alone will repay, and the experience gained prove helpful for the following year. Forty-five years ago the Belgians were in poverty and misery. Since that time the encouragement given to the growth of flax by England has so improved their condition, that scarcely any poor are to be found amongst them. Where villages formerly stood towns have been built up with British gold. And to show the extent to which money has been sent out of this country, in consequence of the encouragement given to foreign agriculture and to the employment of foreign labourers, I beg to refer the reader to the letters of the Messrs. Marshall, where he will perceive that the average cost of raising and preparing a crop of the finer descriptions of flax for market is 13*l.* 10*s.* per acre, including 5*l.* rent, and the average value 23*l.* per acre, leaving a clear profit, *independent of the seed*, of 9*l.* 10*s.* per acre. Now it is reported that the Messrs. Marshall annually import flax to the amount of one million sterling. Calculating the value of the flax at only 20*l.* per acre, the gross quantity of acres

which this eminent house requires every year is fifty thousand. And when we remember that there are many other eminent firms in the kingdom that require proportionable quantities, it may well be asked, How many thousand acres must be annually grown to supply the demand? I reply, nearly 500,000, and that an extraordinary demand would be, directly and indirectly, occasioned for labour such as the redundant agricultural population could not supply.

The most efficacious plan of extending the cultivation of flax throughout the kingdom would be by the reorganization of the National Flax and Agricultural Improvement Association, of which the following is the prospectus:—

National Flax and Agricultural Improvement Association, formed for the purpose of affording Instruction and Assistance in the Cultivation of Flax, the Use of the Seed to Fatten Cattle, Box Feeding, Summer Grazing, &c. &c.

The nobility, clergy, gentry, and yeomanry, are earnestly solicited to join this Association, which offers the prospect of finding immediate employment for a large portion of the redundant population, and of advancing the *agricultural and commercial* interests of the United Kingdom.

The National Association was formed at Ipswich on the 3rd of November, 1843; on which occasion many specimens of flax and linseed of superior quality were exhibited from various counties, proving that the soil and climate of this country are peculiarly adapted to the culture of the plant.

From a series of experiments made during the past four years, and now in extensive operation, particularly in Norfolk, it has been incontestably proved that a compound of flax-seed, with grain, pulse, or chaff, for fattening cattle, is far superior to foreign oil-cake; and if used in connexion with box-feeding and summer-grazing, will enable every farmer in Great Britain to fatten more than double his usual number of stock, and render him for ever independent of foreign aid, both for food for his cattle and manure for his land. Hence it will readily be seen that a more abundant supply of corn, meat, wool, leather, tallow, oil, flax, and hemp, &c. &c., must be produced, and the merchant,

the tradesman, the artisan, and the labourer, reap proportionable benefits with the cultivators of the soil.

A meeting of subscribers will shortly be convened, to adopt rules and regulations for the conduct and management of the National Association, based upon the following approved suggestions.

1st. That the existence of the Society be limited to the period of four years. That auxiliary branches be established throughout the kingdom. That instruction on the most improved mode of husbandry, the cultivation and preparation of flax, the new system of grazing with compound, summer feeding in boxes, &c. &c., be speedily and effectually disseminated by the location of experienced labourers for a few months where needed, in exchange for others to be taught on farms from whence those labourers were sent, that while some were communicating others would be receiving instruction. The wages of these men to be paid by their employers, and the cost of their journeys by the Society. That an interchange of visits be promoted between intelligent agriculturists of different counties, and gentlemen of leisure and patriotism, whose services in attending public meetings, and in conferring with interested parties, would be of the utmost importance. That a weekly paper, containing authentic information upon all important agricultural topics, be regularly forwarded to every subscriber, that through this medium correspondence might be conducted, intelligence conveyed, and scientific experiments recorded. That economy, expedition, zeal, and perseverance be the distinguishing features of the Society's proceedings. And that no expenditure of time or funds upon yearly entertainments or anything foreign to the direct object be allowed.

Ladies are also invited to afford their patronage to the National Association, because it is proposed through their co-operation to introduce the spinning and knitting of linen yarn in *schools, orphan asylums, Magdalen*, and other institutions where employment is required; and especially those finer qualities of *hand-spun yarn* for which our manufacturers of lace, muslin, lawn, cambric, &c. &c., pay many thousands every year to foreigners; and when it is understood that a woman can spin 20s. or 30s. worth of this description of yarn from

sixpenny-worth of flax, the importance of introducing such a branch of business into the above establishments will readily be perceived.

N.B. The National Association will be supported by annual subscriptions, donations, and guarantee sums—that is to say, subscriptions and donations will be immediately required to set the machine in motion. But the guarantee support will only be resorted to in case of a deficiency in the Society's funds, and then only in such proportions as may be found necessary.

JOHN WARNES, Jun.,

Hon. Sec.

Trimingham, near North Walsham, Norfolk.

A few acres of linseed should be sown in different parts of a district or county, and on different soils, in order to ascertain those most congenial to the growth of the plant. The seed will abundantly pay for the experiment; and although the straw will probably be ordinary the first year and the intrinsic value small, yet for the purpose of teaching young persons the art of steeping, scutching, and preparing for market, &c. &c., its value would be great. The flax might be concentrated in some convenient place for water and for house-room; where an instructor could be stationed to teach active and intelligent youths. And thus a number of experienced hands would soon be distributed, at a little expense, through the country. Information and instruction would also be circulated from one society to another, and in the course of three or four years we should be rendered independent of foreigners for a supply of flax from our mills and oil-cake for our cattle.

What a mine of wealth is here placed before the British agriculturist! What a field is open for the exercise of his industry and skill! Can he any longer suffer this mine to be worked, and this field to be tilled by foreign labourers, while his own call upon him for work in vain? The population daily increases to an amazing and alarming extent; for if we cannot provide employment for the present, where can we find it for the future labourers? The education of children is pro-

posed as a remedy ; but such a remedy, if our present circumstances are to continue, would only increase the national difficulties ; because it is impossible to suppose that educated minds can be made to submit to the degrading operation of the Poor Laws. Strange anomaly ! that the efforts recently made to improve the condition of the parents should have failed. Had those efforts been successful, the children could be educated at the cost of the parents, upon whom alone the real responsibility rests. It is surely the office of government to protect the poor from oppression and imposition, and to see that they can obtain the means of rearing their families by their own exertions.

How far the following pathetic remarks of the philosophical Stanislaus, King of Poland, are applicable to the present state of our poor, I must leave the reader to judge. Should they tend in any degree to ward off the calamities to which they refer, their insertion will not be in vain :—

“ We may say with truth that the people are in a state of extreme humiliation. We must nevertheless consider them as the principal support of the nation. And I am persuaded that the little value we set on them will have very dangerous consequences. Who are they, in fact, who procure abundance in the kingdom ? Who are they that bear the burdens and pay the taxes ? Who are they that furnish men to our armies—who labour in our fields—who gather in our crops—who sustain and nourish us—who are the cause of our inactivity—the refuge of our laziness—the resource of our wants—the support of our luxury—and, indeed, the source of all our pleasure ? Is it not that very populace that we treat with so much rigour ? ”

The fate of Poland is too well known to need any comments. To the superficial reader it may perhaps appear that I lean too much on the side of the poor ; but the discerning mind will perceive, throughout every page, that, in advocating the cause of the poor, I have at the same time advocated the cause of the rich. And though I have called my pamphlet “ A Voice for the Poor,” I might with equal propriety have called it “ A Voice for the Rich.”

EXTRACTS FROM ANCIENT AND MODERN WRITERS
ON THE FLAX CROP.

THE following extracts from ancient and modern writers on the flax crop will show that my own views and experience accord in a remarkable degree with those of former writers—writers who longed to see the day when their works, instead of being thrown upon the shelves of Agricultural boards, should find that patriotic support which my present attempt has had the good fortune to obtain—writers who lived in times when the union of agricultural interests was never resorted to for the benefit of the community. Hence their constant recourse to Government, and their too frequent disappointment, which, I think, the failure of providing Great Britain with a supply of home-grown flax commensurate to the demand does most clearly exemplify. For it is evident that parliament was not only convinced of the suitability of our soil and climate to the growth of flax, but also of the important results that would accrue from its introduction into the routine of British husbandry.

Flax was first introduced into England by the Romans. In 1175 it was classed amongst all titheable productions. In 1531 a statute was enacted, requiring that, under certain penalties, “for every sixty acres of land fit for tillage, one rood should be sown with flax and hemp-seed.”* From that period to 1767 many unsuccessful attempts were made to extend and improve the cultivation and preparation of flax. In the latter year several thousand pounds were proposed to be divided amongst the successful cultivators of the plant. About the year 1798 a bounty of 4*d.* per stone was given to claimants for the growth of flax. “In 1810 a new method of dressing flax was proposed by Mr. Lee, who not only patented the invention, but obtained an act of parliament by which the

* In the register of Pulham St. Mary fines paid for the non-fulfilment of this law are recorded.

specification of his invention was ordered to be deposited in the Court of Chancery, to be kept secret from the public for fifteen months, and then to be produced only by order of the Lord Chancellor, and by him to be examined whenever occasion required. . . . Messrs. Hill and Bundy, in the year 1817, likewise patented an ingenious machine for breaking and rubbing flax; but though this was said to have considerable merit as regarded its mechanical arrangement, the machine has not been found of greater practical utility than that of Mr. Lee.”

For centuries past the legislature made repeated attempts to establish an extensive cultivation of flax and an improved method of preparation throughout the kingdom without effect. The attempts to render us independent of other countries, however feeble and incomplete, savoured of sound political knowledge; for, had they proved successful, England would not now have been compelled to pay an export duty to the Belgian Government for the privilege of purchasing their flax—a duty that has only been imposed since the alteration of our tariff; a circumstance that Englishmen in general, and agriculturists in particular, ought well to consider, because the price of the raw material must necessarily advance, cause the home-cultivation to become a more lucrative business, and obtain for the cultivator a reward far exceeding any premium Government could offer.

Now, what legislators failed to accomplish in former periods has, within the last three years, been actually achieved in Ireland, through the instrumentality of the Flax Improvement Society of that country. Our sister kingdom can now vie with foreign states in the production of the finest and most profitable description of flax. This they effected by engaging first-rate Belgian instructors,* and by sending young men abroad to learn the best methods of culture and after-management of the crop.

The causes of failure in former times may be traced to various circumstances that do not now exist. In truth, many

* Two of whom are now in my own service, viz. Jonas Clark, and Savine Fues.

of those impediments against which our ancestors had to contend have long since been removed. They had but little incentive to engage in a new branch of business, while with us it is much otherwise. Our forefathers were comparatively free from the burdens that press so heavily upon the agriculture of the present day, of which by far the greatest is an unemployed population. We find that no longer ago than the year 1781 the cultivation of flax was recommended on the score of increasing our population, by inducing "numbers from the Continent to settle in England, as a great national advantage."* And the landowners of Argyleshire are also reminded that "the riches or productiveness of their estates must depend more on the number of the people, than of the sheep, by which they are occupied."†

Formerly the value of linseed, and the chaff from the bolls as cattle food, was utterly unknown. Both were disregarded, and cast into the steeping-pits with the stalks. If a little of the seed were at any time saved, it was always sold to the oil-mill, never consumed on the farm. The only chance, therefore, of remuneration centred in the fibre. Hence the dreaded exhaustion of the soil, and the prohibition of its growth found in old leases.

But to us flax is a double crop, the most important part of which is the seed. For, admitting that the fibre would obtain more money at market, yet the seed being consumed by cattle on the land where grown, its influence is diffused over the whole farm, and it returns to the pocket of the farmer a ten-fold greater profit in the shape of meat, corn, &c.

In former times the exercise of agricultural skill and science was extremely limited; and, whether flax or wheat, the exhausting effects of a good crop were not easily remedied; now agricultural skill and science have advanced in an extraordinary degree, aided by industry, learning, and chemical research, so that deterioration of soil consequent on any crops is no longer to be feared. Then sufficient hands were scarcely found to till the land; now we have an overwhelming popu-

* See letter signed Dorsetshire Gentleman.

† Agricultural Survey of the county of Argyle.

lation, to find employment for which all the skill of scientific men, and all the efforts of a powerful government, are at a stand.

It is to the indirect advantages of growing flax that I would attract public attention, because they are infinitely greater than the direct. Nor can they be rightly estimated till experience has made them sure. The direct return in money is a trifle compared with the immeasurable benefits that must accrue from an employed population. I have shown in my writings the value of the flax crop in this and in foreign countries. Also, that five hundred thousand acres are required to supply the demand of this country alone. Now when we consider how inadequately the soil remunerates under our present system of farming, and the consequent depression of trade, it surely must be acknowledged that the appropriation of such an immense breadth of land to the growth of this prolific plant would be attended with the most beneficial results throughout the kingdom. For instance, the average value of five hundred thousand acres of flax, independent of the seed, exceeds five millions of money.

This enormous sum is annually sent out of England to purchase foreign flax of foreign farmers, to the employment of foreign labourers, and to the encouragement of foreign agriculture.

The scheme undoubtedly appears chimerical to many; but it ought to be remembered that mankind is generally more hasty in condemning new theories than anxious to ascertain whether or not those theories are founded upon sound principles.

Thus did the substitution of cattle-compound for foreign oil-cake undergo the ordeal of a vehement opposition; but now the opposers have become its most zealous advocates; and I venture to predict that similar results will attend the cultivation of flax.

My motives for inserting extracts from the writings of others are to show the progress made in the culture of flax, and to prove that my views and arguments are neither new nor visionary, but are borne out by the reasoning of powerful minds long since removed from the prejudices and politics of the present day.

I select, first, from the 'Transactions of the Board of Agriculture' a letter written about seventy years since by Robert Somerville, Esq., of Haddington, in East Lothian. Had it fallen into my hands earlier it would have obviated much trouble, but could not have been offered at a period more opportune. He observed:—

“Flax is an article so essentially necessary to the British Kingdoms, that it is matter of astonishment the cultivation of it should be so much neglected, and the management even of the small quantity that is cultivated so very defective.

“The liberality of Government has, for many years, held forth great encouragement for promoting the growth and manufacture of this necessary article, by expending large sums in bounties; notwithstanding which, the object so much desired has by no means been obtained to the extent that could be wished; the cultivation being still extremely limited, and the management, in every stage, both of the culture and manufacturing into flax, very defective. This is the more to be regretted, as there can be little doubt that immense quantities might be raised in Britain with little labour, and that too upon soils where hardly any thing else will grow; and every part of the management, from the time of sowing till it is manufactured into flax, very easily taught to the country people.

“The accomplishment of an object so truly desirable, would be attended with the most salutary effects by affording employment for an increased population, and materially lessening our dependance upon other nations.

“The purpose of the following pages is, first to give a general sketch of the present mode of cultivation and managing flax, then to enter into the detail of the principal operations, point out what appears defective in each, and offer some hints for improvement.

“No regular system is at present pursued by those who cultivate flax; and very little attention is paid either to the nature of the soil upon which it is sown or the preparation of that soil: except in a few instances, it is cultivated upon a very contracted scale, seldom more than an acre or two being in the possession of one person, and in many cases it does not exceed an half or a quarter of an acre, as may be seen by

looking over the premiums awarded by the honourable board of trustees.

“ In the present state of Britain, with regard to provisions and population, the question is of high importance, whether a part of the arable lands which are now acknowledged to be barely sufficient for producing a due proportion of grain and other necessaries of life, can with safety be withdrawn from that purpose and employed in any other way. Humanity as well as sound policy forbids the attempt; the effect certainly would be that of enhancing the price of provisions, a calamity which has already been but too severely felt. This consideration, though it may deter proprietors and farmers from using their good arable lands in that way, does not preclude the idea of raising flax to a great extent; at present there are immense tracts under the denomination of moors, mosses, swamps, wastes, &c., upon which flax and hemp may not only be successfully raised with little labour and at small expense, but the tillage and other operations given for the flax-crops will greatly facilitate their improvement and put them in the proper train for the culture of grain, &c.

“ It is well known to those who have had much experience in raising flax and hemp, that very large crops of both may be obtained from lands of the above description, not only with safety but advantage to the soil. Property of this sort is allowed to remain in a state of nature; in some cases, from an idea that it is not worth improving, and in others on account of the great labour and heavy expenses of purchasing lime and other manures sufficient to render it fit for carrying grain.— Fortunately flax requires no such expensive preparation. Tillage alone, and the cost of the seed, are all that are necessary; and the crop in general, when properly managed, will not only repay these but afford a profit sufficient to enable the cultivator to purchase lime or other manures for his future crops. In that way a double benefit will result to the community; first by keeping great sums of money in the country that are yearly sent abroad, and at the same time furnishing an abundant supply of an article that cannot be done without; and secondly, by assisting and holding out an incentive for the cultivation of waste lands.

“ In a paper formerly presented to the Board of Agriculture, and which is now published in the report of their committee on the subject of potatoes, notice is taken of the ease with which that valuable root may be cultivated on waste and unimproved soils, and the advantages that may arise from the practice pointed out. Perhaps the attainment of that important national object, the cultivation of waste lands, will be more promoted by the general introduction of flax or potatoes as first crops, than by any other means; neither of them require any expense except seed and tillage; they increase the materials for several valuable manufactures, furnish a wholesome and nutritious article of food, afford a profitable return to the cultivator, and give employment to many hands.

“ To those who are judges of the real interests of their country, the importance of what is above mentioned will be evident, even if the cultivation of flax were confined merely to supplying ourselves; but perhaps the matter ought to be carried further, and Britain might soon be able to rival Holland, &c., in supplying other nations. The soil of this country is at least equally fertile, and the climate as genial as that of Holland or the provinces on the shores of the Baltic; why then should the crops of flax raised here be more scanty, or the quality inferior to what is produced in those parts? The only thing wanting seems to be a knowledge of the method of managing the crops, in which the British, notwithstanding every attempt to the contrary, are still extremely defective.

“ The quantity of flax raised in Britain is not only small, but the seed from which even that small quantity is raised is annually imported either from Holland or the Baltic, from an absurd and erroneous opinion that after seed has been once sown in this country the produce is unfit for that purpose afterwards. How such an idea came to be entertained at first it is difficult to imagine. Britain is well known to be famous for the growth of grain and other vegetables; why then should it be incapable of producing flax, an article that thrives at great perfection in Holland and elsewhere, upon worse soils, and in much more inhospitable climates? Were it a matter of which any doubt could be entertained, the subject is sufficiently important to entitle it to a complete investigation. To those, however, who

are acquainted with the soil and climate of Holland, and other parts from whence flax is imported into this country, and who are capable of making a just comparison between them and Great Britain, such an inquiry will appear superfluous, as the advantage is decidedly in favour of the latter.

“The fact seems to be that the Dutch, who have been long in possession of that trade, and who have, in consequence, arrived at a higher degree of perfection in the management of flax in all the different stages, both of its growth and manufacture, are enabled not only to raise and dress it much better than we are, but can bring it into the market at a cheaper rate; and as they have found it a most profitable article, they have industriously propagated an idea, which has been as readily believed in this country, that both the seed and flax raised in Britain are greatly inferior to what is produced in Holland.

“It must be admitted, that where the crop is cultivated for the sake of the flax only, it is generally separated from the ground at so early a period that the seed has made very small progress in ripening, and of course would, upon trial, be found very unfit for the purpose of sowing next year. While this practice (*for which no reason that is completely satisfactory has yet been assigned*) continues, a new supply of seed will be annually required; but I shall endeavour to show, in a subsequent part of this paper, that with proper management, and without any additional expense, it is possible to unite the advantages of well-matured seed, and a valuable crop of flax. This is no visionary idea, as it is done in Holland and elsewhere every year; and the whitest, most durable, and easiest bleached flax produced in those parts, is from crops where the seed has been completely ripened.

“It has been argued, and with some degree of plausibility, that where the seed is ripened, the quality of the flax is not only worse, but the soil is also much more exhausted than in cases where it is pulled green. At first view this argument appears well founded; and certainly, if flax were pulled while it is in flower, the exhaustion of the soil would be infinitely less than when the seed is allowed to ripen; but when it is considered that at the usual time of pulling, the seed is not

only formed, but has made very considerable progress, if a careful inquiry is made, it will be found, that the crop has in that stage drawn as much oil and other useful principles from the earth as it possibly can do. For though the seed of the flax at that period contains less oil than it does when completely ripened, yet that portion which is deficient in the seed, will be found to exist in the stalk in the form of a mucilage which the vessels of the plant, aided by the operation of light and heat, would soon have converted into oil also. If this reasoning is sustained (and some trials which I have made go a great way to support it), the exhaustion of the soil must be the same in both cases; the only difference is, that by allowing the crop to remain in the ground, vegetation is continued till the plant is perfected, and a complete separation of its component parts takes place. By this separation the oil will be deposited in the seed, the aqueous juices will be dried, and exhaled by the sun, the stalk and flax being deprived of these will assume a white appearance, and the gummy mucilaginous juices being exhausted, little or no impediment will remain in the separation of the flax from the stalk; for, as I will afterwards show, one of the principal obstacles to the separation of the flax from the stalk, arises from the glutinous nature of the juices contained in green flax. With regard to the flax being of a coarser quality, when the seed is allowed to ripen, than when it is pulled green, I have no hesitation in saying that this is an error. I will even go farther, and assert, that the ripening of the seed may not only be attempted with perfect safety, but that the flax will be whiter, and every operation it has to go through facilitated thereby; but this will be illustrated more at large in a different part of this memoir: the only thing intended to be inculcated in this place is, that flax-seed of the best quality may be raised in Britain without injuring the flax or exhausting the soil more than is commonly done for crops where the flax is pulled green. Such are the ideas that have occurred to me, in considering this very important branch of the rural economy of Great Britain, and which I now submit with all possible deference to the Honourable Board of Agriculture. I trust that they will ultimately lead to a complete

and scientific examination of the subject, and that a system of management will soon be established upon solid and durable principles.

“ The points seemingly most worthy of minute investigation are the following :—

“ 1st. The chance of raising hemp successfully upon swampy and marshy grounds by cutting open drains between the ridges.

“ 2nd. The practicability of raising flax upon mosses, moors, and waste lands, with profit to the cultivator, and as a step to their future improvement.

“ 3rd. To ascertain what benefit would arise from sowing flax at an earlier period of the season than is done at present.

“ 4th. To ascertain whether the mode of pulling flax, above pointed out, is better calculated to separate the long from the short flax, and the fine from the coarse, than the method at present in use.

“ 5th. To ascertain whether the seed can be ripened without detriment to the flax; and if the quality is coarse when the seed is ripened, to determine how far it is inferior to what is pulled green; and whether the value of the seed will not be more than an equivalent for the difference of the quality.

“ 6th. To determine whether the flax that has ripened the seed contains less mucilage and colouring matter than that which is pulled green; and which of the two requires the greatest labour in the manufacturing.

“ 7th. To ascertain by careful experiments the best and most speedy means of watering flax, so as to produce an easy separation between it and the husk or stalk, and at the same time purge it of the mucilage, colouring matter, &c., contained in it.

“ 8th. To make comparative trials between parcels of the same flax that have been steeped an unequal length of time, from two to eight weeks, with a view to regulate the duration of the steep.

“ 9th. To determine experimentally whether flax that is sown

thin, and grows tall and strong in the stalk, is inferior to that which is thicker sown and smaller in the stem.

“10th. To try whether any improvement can be made upon the rollers of the flax-mills, so as to break the husk as much as possible, and by that means render the separation between it and the flax more easy.

“11th. To try whether any improvement can be made in the mode of scutching, so as to prevent the flax from being wasted and broken in the operation.

“N.B. I am of opinion improved rollers at the flax-mills, with very small deep fluting, would render the scutching less severe.

“12th. To determine comparatively whether long or short hickles make least refuse in dressing flax. I think short hickles would dress it equally well and waste less of it.

“13th. To determine by fair trials whether the use of a great number of hickles is more profitable than putting the flax through only two, three, &c., beginning with very coarse ones and ending with the finest.

“Such are the points respecting flax management that seem to me most deserving of experimental inquiry, and the thorough investigation of which promises to afford sufficient data for laying the foundation of a more perfect system than the present.

“ROBT. SOMERVILLE.”

Sincerely do I rejoice in being the instrument of drawing from obscurity the above important letter. Important because, if the arguments it contains in favour of the cultivation of flax were applicable to the times in which Mr. Somerville lived; with how much greater force may they be urged upon our present consideration, with a population nearly double, and a yearly increase of about 400,000—a population for whom there is no prospect of finding regular employment except through the introduction of a new and permanent branch of business. In a national point of view, one more suited to the

soil, climate, and genius of the people, could not possibly have been proposed than that of an extensive culture of flax upon the plan which I have so long recommended; a business which every grade of the British community contributes, more or less, to promote in foreign countries, to the advancement of foreign interests. It is true that we export linen to the amount of several millions a year; but it must always be remembered that we first import the raw material to the yearly amount of five millions. To retain this enormous sum is the object for which the National Flax Association was formed. We have succeeded in proving, beyond controversy, that we can produce this raw material. And, when we consider that thousands of our countrymen are, at the present time, reduced to the most aggravated distress, it cannot be doubted but that the philanthropy of the British public will respond to the call, and co-operate with an Institution through which every possible encouragement will be offered to the growers of flax. The want of knowledge as to the best methods of preparing flax, appears to have been the main cause of former failures; to avoid the repetition of which, by the location of competent instructors, will be the care of the National Association.

The advocacy of this great cause no longer rests upon my individual efforts, but upon the sound, thinking, and intelligent part of the community; upon minds that perceive the vastness of the undertaking and are willing to lend their powerful aid in carrying it out. The prospect of success is before us; and I confidently anticipate that time and circumstances, under the guidance of a merciful Providence, will bring about a happy realization.

The following letter was taken from the 'Gentleman's Magazine' of 1742:—

*The Produce arising from One Acre of Ground sown with
Flax-seed considered.*

SIR,—Cybele, who was no other than the Earth, was, with good reason, looked upon as the Mother of all the Gods, because it is from the due cultivation of the earth that all sub-

lunary blessings (the only blessings which the Heathens thought of) are derived.—The Chinese, who are, in their civility, the wisest people that ever existed, esteem Agriculture* to be the root of all power and riches; and however Commerce may seem, in this or any other country, to rival Agriculture, yet it is plain that if it were not for the latter the former could have no object.

There is nothing more plain than that the land of Great Britain is the foundation of all our riches, power, and commerce; 'tis to us the Mother of all the Gods, and ought as such to be venerated by the legislature and every set of men.

I shall not attempt to prove this from the well-known calculations of the importance of wool and other branches of manufacture, but confine myself to that branch which, I have often said, I profess alone to understand, I mean the Linen trade. For this purpose I shall endeavour to calculate the vast advantage arising from that trade, by considering the vast produce arising from the cultivation of one acre of ground sown with flax-seed.

Great Britain not only produces the largest crops of flax, but the toughest and finest of any in the world; our soil is so proper for it, that unless the farmer mismanages his flax in reaping, watering, or grassing, it is not in his power to raise coarse flax.

On the supposition then that the farmer shall apply the same skill in choosing of land proper for a crop of flax as he would do for wheat, I take it that an acre of land, at a medium, will produce 50 stone, Dutch weight, of flax; and an acre that shall produce but 30 stone, I take to be amongst the worst of crops, though I have known an acre to produce 100 stone.

I shall suppose this 50 stone to be of such a fineness as to be capable of being manufactured into cambrick at 10s. per yard. This 50 stone Dutch weight will produce 25 stone English of fine flax, fit for the said cambrick, and 12 and a half of inferior sort, fit for linen, at 2s. 6d. per yard; besides 12 and a half of the coarsest sort, fit for making linen at 8d. per yard.

* See Du Halde's Description of China, Vol. I. of Agriculture, and the Privileges of the Husbandmen, p. 172; Declarations of the Emperors in Favour of Agriculture, pp. 457, 459.

The 25 stone of fine flax will yield 2000 spindles of yarn, at 5 spindles in the pound; which wrought in the finest reed, viz., a 2400, will produce 2388 yards of cambrick at 10*s.* per yard, amounting to 1194*l.*

The 12 stone and a half of the second sort of flax will produce 200 spindles of yarn, which, when wrought in a 1500 reed, will yield 452 yards of linen at 2*s.* 6*d.* per yard, and this amounts to 56*l.* 10*s.*

The 12 stone and a half of the coarsest flax spun into yarn, at two pounds per spindle, and wove in a 600 reel, will produce 1129 yards of linen, which, at 8*d.* per yard, amounts to 32*l.* 12*s.* All these sums make no less than 1283*l.* 2*s.*, the produce of one single acre of flax.

That the computation of 50 stone to an acre of flax is moderate, I appeal to all the flax-raisers in Yorkshire and Lincolnshire; that 10*s.* a yard for the finest cambricks is a low valuation, I appeal to all the linen-drapers in London; and that the calculations of the produce of the yards from the several quantities of flax and yarn are just, I appeal to all the spinsters and weavers in Great Britain and Ireland.

To what an immense sum would this produce amount, did we suppose an acre to produce 100 stone instead of 50, and the cambrick at 15*s.* or 18*s.* per yard instead of 10*s.*! Nay, farther, should we suppose that this flax was manufactured into lace. I don't know but we might swell the reckoning above a hundred fold.

I shall now compute how much an acre of the worst flax must produce, when manufactured into the meanest sort of linen; a case, that though it can scarcely happen in this country, yet, for argument's sake, I shall admit.

It will not be denied that, of all flax, the Riga and Petersburg is the coarsest; that of all linens the fabric of the Dundee linens is the poorest and meanest; that Riga and Petersburg flax is of a sufficient quality, and is commonly used for the fabric of the Dundee linen; and, lastly, that 30 stone of flax to an acre is a very bad crop. This 30 stone of flax then, supposed to be the produce of an acre, will yield 240 spindles of yarn, at two pounds to the spindle; and this 240 spindles, wrought in a 400 reed, will produce 1152 yards of linen,

which, when whitened, and made into buckram, is worth *7d.* per yard, and amounts to *67l. 4s.*

But as this supposition consists merely in speculation, and cannot be so low in fact, because the worst flax that grows in Great Britain is of infinitely a finer quality than the Riga and Petersburg flax, and that the refuse or tow of the worst British flax is of a sufficient quality for the fabric of Dundee linens, I shall proceed to show what sum the produce of an acre of flax may be supposed, at a medium, to save or yield to these kingdoms.

But, before I go farther, I must inform my reader of a circumstance, which, though but very little known, he may rely upon as an absolute certainty, and that is, that though the quantity of flax an acre will produce depends entirely on the quality of the soil and cultivation of it, yet the fineness of the flax depends almost solely on the conduct of reaping, watering, and grassing of it: and if all these parts are conducted with the same judgment and discretion that a British farmer usually bestows on his other branches of husbandry, he may lay his account with 50 stone of flax on an acre one year with another; and that his dressed flax will spin to two spindles in the pound; and if that shall be the case, the computation will be as follows.

The 50 stone of flax will yield 25 stone of dressed flax, fit for linen at *4s. 6d.* per yard; 12 stone and a half of second flax, fit for linen at *1s. 8d.* per yard; and 12 stone and a half of the coarsest flax, fit for buckram, at *7d.* per yard.

The 25 stone of dressed flax will yield 800 spindles of yarn, two spindles in the pound. These 800 spindles of yarn, wrought in a 2100 reed, will yield 1238 yards of linen, and computing each of these yards at *4s. 6d.*, a very moderate price, the amount will be *278l. 11s.*

The 12 stone and a half of second flax will produce 100 spindles, at 40 cuts to the pound; the 100 spindles, wrought in a 1200 reed, will produce 266 yards of linen, and each yard at *1s. 8d.* amounts to *22l. 3s.*

The 12 stone and a half of coarsest flax will produce 60 spindles, at two pounds of flax to the spindle; the 60 spindles, wrought in a 400 reed, will produce 576 yards of linen, which,

made into buckram, at 7*d.* per yard, yields 16*l.* 16*s.*; and these three articles thrown together make 317*l.* 10*s.* as the produce of an acre of flax; and this, or near to this, without straining the argument, may be supposed to be the medium that an acre of British flax will produce. For though it should be argued, that linen at 4*s.* 6*d.* per yard is above the medium that British flax could be manufactured to, yet when it is considered that, though 3*s.* or 3*s.* 6*d.* should be rather said to be the medium, yet as the increase of the number of yards would in that case be in proportion to the decrease of the value of the yards, it would make but a trifling variation in the account.

But to conclude, as it is a certain truth, that every acre of flax in Flanders, taking one acre with another at a medium, does not produce good 300*l.* in manufactured goods to that country, and that Great Britain does naturally produce as rich crops, and of as good a quality, not to say better, than Flanders; I see no reason why we may not conclude that an acre of flax, properly cultivated and manufactured, will yield the same advantage to Great Britain that it does at present to Flanders; and that it is in our power, by suitable encouragements, to snatch that manufacture out of the hands of the Flemish, as we have formerly done the woollens.

I am, Sir, yours, &c.

1742.

SAMUEL HOMESPUN.

Agriculture in the County of Perth.—By James Robertson, D.D.

The culture of flax is universal in this part of the kingdom, but is not carried to such an extent in any other place as in the districts of Stormont, the west end of Strathmore, and Athol. The farmers in other places generally grow some for their own use; and where the land is more favourable for that plant, they are able to supply those whose soil does not raise it to advantage. The clay land seems to be of too close a texture for its tender roots, and binds too much to allow the fibres to expand themselves in quest of nourishment. The light sandy soil, on the other hand, is too weak to carry a heavy crop, and is too much exhausted by it to render the lint crop a sufficient

recompense for the chance of failure in the subsequent crops. The fittest soil for lint is a deep loam or rich haugh, on a moist bottom, where the pores are not so close as in clay or till, and the strength of the soil fully equal to the food which the plant requires.

The foot of every brook in the Highlands, where the water runs slowly, and plenty of sediment is deposited, making an annual addition to the soil, carries amazing crops of lint. On the banks of our large rivers, where the land is occasionally flooded by back-water, the lint is generally a good crop: and it is raised successfully, the second crop after good clover ley, which saves weeding; but this ought to be sparingly tried, because it is a bad rotation, unless a fallow crop succeed.

In those countries, from which the greatest quantity of flax and of seed is imported, the most favourite soil for this crop is on the banks of large and gentle-flowing rivers, which, by their flooding, have, in the course of ages, formed the richest and deepest mould. This may show us what is its native soil, and where it can be cultivated with most profit in this country.

In those parts of the county where wheat is plentifully propagated, the flax husbandry is less attended to. Judgment is discovered in this practice, because both crops scourge the ground: and in a close rotation an intelligent farmer can scarcely introduce both.

In the Carse of Gowrie, Mr. Donaldson says that flax is cultivated in small quantities, and sells from 9*l.* to 12*l.* the acre, when disposed of before pulling.

If linseed be sown, with an intention to let the flax remain to carry ripe seed, it ought to be thin, that the plants may have plenty of air, be in less danger of lodging, and have room to grow to their full size. If it be sown on purpose to have fine soft flax, it should be sown pretty thick, that the plants may rise the closer together, may grow slender and tall, which adds much to the fineness of its quality. Another circumstance worthy of notice is, that if the saving of seed is the object, the flax must stand so long on the field, to bring the seed to maturity, that the rind becomes coarse and dry; and if the flax is the object, the crop must be pulled somewhat green, to preserve its fine glossy quality; in which case the seed has not

time to arrive at perfection. So that it is scarcely possible to have silky flax and ripe seed from the same crop.

Although the farmer does not choose to risk the quality of his lint, by allowing the seed to come to maturity, yet the seed ought to be ripped off, after the lint, in the sheaves, has dried so much, that this operation may be performed without tearing the ring; and this seed may be sold to the oil-mill for having the oil extracted. The cakes are an excellent food for cattle, or may be used on grass-lands as a top dressing.

Soft water is best for steeping lint; and it is sufficiently watered when the reed breaks without bending, and the rind parts easily from the reed. It is absurd to leave the lint a certain number of days invariably in the canal. When the weather is warm and the water is soft, it is much sooner ready than otherwise. The longer the water has been let into the canal, before the lint is immersed into it, the more rapid the putrefaction. Lint is ready to be taken up from the field, whenever the bark blisters and rises from the reed.

In order to save the seed of flax, some persons who are knowing in the business recommend to set up the lint sheaves, after pulling it, in stooks, like grain, and when thoroughly winn to stack it until the next spring. The seed is then easily rubbed off by a roller, without injury to the flax, by putting the sheaves head to head. The profit on saving the seed is estimated to be from 5*l.* to 6*l.* per acre. The farmer, by this process, has the whole summer before him to water and dress his lint, without encroaching on the operations of the autumn in these respects.

In the latter end of October, 1795, I observed vast fields of lint in all that tract of country between the Seedlaw hills and the Grampians, and not a little in other places, lying spread upon the ground till the grass had almost covered it. If this be the general practice, it is in a high degree prejudicial to the quality of the lint. The excessive rains of that autumn may have prevented the farmers from getting their flax dried, after it was fully grassed and long enough on the field. But why was it not set upon end? Why were there no attempts made to expose it to the wind during any intervals of dry weather? In the course of two months there must have been

some intermission of the rain. An enterprising farmer will seize every favourable moment to forward the operations in which he is interested, and not sit, with his hands across, waiting for a long tract of serene weather, which may not come, till his all be lost. In the rainy climate of our insular situation, surrounded with high mountains, the business of the husbandman must often, in any season, particularly in harvest, be done in snatches, or not done at all. There are favourable moments in all the business of life, especially in farming, which if once past, a similar opportunity may never recur. I knew a farmer, in such a season as is here alluded to, who saved his crop, while his neighbours lost theirs, by employing his people to work all night, and allowing them to lie by all day, because the nights were fair and clear, with some wind and frost, and the days rainy.

In watering lint it is not uncommon to give it too little time in the canal, and too much on the field. It were a more sensible and safer procedure for securing the crop, and better also for the quality of the lint, to let it lie in the water until it be fully ready, and either not to spread it all, or to give it only a short time on the grass. It might be set upon end, like the geats of corn, and exposed to the wind as soon as the water had dropped from it, for a short space, on the brink of the canal; and if there was any doubt of its being fully watered, a little more time might be given it in this situation. This is the practice abroad in the lint-countries, and in some places at home. The lint is thus watered equally, which is hardly possible on a field, where the under part, which is always buried in grass and corroded with dew, if it remains long in that situation, must be rotten before the upper part be sufficiently done; and perhaps the whole may be lost in a rainy season before it can be got up. By that management the silky gloss and green colour of the flax is equally and more effectually preserved. It is a mere deception to suppose that bleaching lint on the field will facilitate the bleaching of the cloth. No cloth is so easily or so uniformly bleached as that made of lint, which is fully and equally watered in the canal.

*Agriculture of the West Riding of Yorkshire. By
Robert Brown, farmer.*

FLAX.—This is a plant which has never been popular in Britain, and notwithstanding the premiums which have been so long bestowed upon those who raised it, the quantity annually sown does not appear to be on the increase. Many parts of this island are naturally fitted for producing it, and none more than that large tract of ground upon the banks of the Ouse, situated in this Riding. In the neighbourhood of Selby a considerable quantity is annually raised; and from the list of the claims given in to the clerk of the peace for the West Riding, it appeared that the parliamentary bounty was claimed in the year 1793 for no less a quantity than 59,000 stones. From our own experience (having formerly sown many acres with flax) we can say with confidence that, upon a proper soil, no other crop will pay the farmer better than flax; and if due pains and attention are bestowed upon the pulling, watering, and scutching, flax of as good a quality may be produced at home as what is imported from Holland or the Baltic.

The produce of an acre of flax will be from 24 to 40 stones avoirdupois, after it is clean scutched. This operation is performed by the hand in the West Riding, there being no mills erected in that part of the country for this purpose. Some of the flax is allowed to stand for seed, which of course renders the flax of less value.

We have found inferior soils, such as new broken up muirs, as well fitted for raising seed as others of a better quality; and they have this advantage, that while the rent is but small, the trouble of weeding them is equally trifling. Besides, seed and flax ought never to be attempted together; when the former is intended the ground ought to be sown much thinner, so as the plant may have sufficient air to fill the bolls; whereas, when the flax itself is considered as the object, it ought to be sown much thicker, to prevent it from forking and becoming coarse; we believe a neglect of these things has con-

tributed to render this valuable and necessary plant not so profitable as might, from the public support bestowed upon it, have been expected.

The uncommon attention paid to the cultivation of flax in this country, especially in the districts mentioned in the beginning of this article, will appear from the annexed table, with which I was favoured by Mr. Arbuthnot, Secretary to the Trustees for Manufactures and Fisheries in Scotland. When one considers, besides the number of yards of linen cloth mentioned in the table, what quantity the inhabitants of the country must use for their own wear, which never comes to market, and is not stamped, and also the vast quantity of linen yarn that is sold to manufacturers of chequed goods in Glasgow and elsewhere, the returns from the culture of flax is a matter of great moment to this part of the kingdom, and will, in some measure, justify me in dwelling so long on this subject.

It must be highly gratifying to every person who wishes well to his country to observe the progressive industry and the increasing wealth of a single county, in *only one* article, so well authenticated. What must be the growing prosperity of the county of Perth, if equally successful in a variety of other articles! How rapid the progress of the property of Great Britain, supposing all its counties to keep pace with that of Perth!

So great is the profit arising from flax, that one gentleman, who is in the foremost rank of improvers in the eastern part of the county, expressed an opinion that the value of the flax manufactured into home linen, stamped linen, and sold in yarn in the shire of Perth, was equal to the whole land-rent.* As he wished to have data, either to correct or support his opinion, it is to me an object of regret that all the necessary data are beyond my power to condescend upon, with any degree of precision. We know what is stamped; and may we not compute that the home consumption, which is not stamped, and the yarn sold out of the county and applied to various purposes that never comes into any of these accounts, is at least

* In the parish of Alyth the whole land-rent does not amount to 4000*l.*, but the value of linen stamped there is 10,000*l.*, at least.

equal to the amount of Mr. Arbuthnot's sum for stamped linen—in all amounting to 258,619*l.* 6*s.* 8*d.*, a sum *far beyond* the opinion of most people?

It is singular that, in a court of law, a crop of lint will be found to be a green crop; and that if a proprietor were to raise an action against a tenant for sowing flax in place of a meliorating crop, in his rotation, the proprietor would be cast. The only remedy in this case is to set aside the question, and prevent any dispute on that point by the terms and articles of the lease, specifying particularly what quantity of linseed is annually to be sown.

[*From a Correspondent.*]

As I have not made any particular observation on the crops of flax in any part of the West Riding, except Marshland, I cannot say positively what is the best soil for it. In Marshland they are allowed to grow as many stone per acre as any part of the West Riding, but not so good in quality. Flax, if not sown upon grass land new ploughed up, generally succeeds a crop of oats; but latterly they have sown it after a crop of potatoes, upon land that has a few years before been broken up from grass, and with good success. Land that is intended for flax, if an old pasture or meadow land, should be ploughed before Christmas; if wheat or oat stubble, betwixt Christmas and Candlemas; and as soon as it has got well dried, in the spring, work it with harrows and the roller till you have got it well pulverized; let it remain in that state for ten days or a fortnight, then open the land out with a harrow, and let the seedsman immediately follow. Endeavour, if possible, to sow after a shower of rain; but wait a few days longer, if the season is not too far advanced, rather than sow when your land is too dry. The rent, if let to a flax-grower, is generally from 3*l.* 10*s.* to 6*l.* per acre.

Home seed is for the most part sown when intended for white flax; if for seed, the Baltic, which makes very good seed next year for white flax, and for three or four years after, but must then be renewed. The quantity sown per acre, if for seed, is eight pecks; if for white flax, from eight to ten pecks.

The produce of flax per acre is very uncertain, it being a crop that depends so much on a good or bad season; in general from 30 to 50 stones per acre. I have had 70 stones grown; and, from a bad season, I have seen the crop not worth reaping. The quantity of seed produced per acre is from 8 to 16 bushels. I have known 16 bushels of seed, and upwards of 40 stones of flax from the same acre; but look upon 12 bushels of seed, and 30 stones per acre, to be about the average, if the season has been a favourable one.

I do think a great part of the West Riding adapted to the growth of flax, and also that the culture of it has of late been considerably extended. From my own experience, I am convinced that flax is not an impoverishing crop, for it is generally reaped the latter end of July, which enables the farmer to make a good fallow of his land; and the crop that succeeds it, whether wheat or spring corn, seldom, if ever, fails.

Expenses upon an Acre of Flax.

	£.	s.	d.
Seed	1	1	0
Working land	0	16	0
Sowing and weeding	0	5	0
Leading, dikeing, &c.	0	10	0
Taking out and spreading	0	12	0
Turning and taking up	0	5	0
Rent of land, if let to a flax-grower	5	5	0
Dressing 50 stones, at 1s. 6d. per stone	3	15	0
Pulling	0	10	0
Profit	7	11	0

£20 10 0

50 stones of flax, at 8s. 6d. per stone, is . £20 10 0

1799.

Agriculture in the County of Argyle, by John Smyth, D.D.

FEW things would contribute more to the advantage of this county than the raising a great quantity of flax, for which our soil and climate are well adapted. Our climate is warm and moist; and we have a great deal of good sandy loam,

which is the best ground for flax. If the culture of this plant were extended as far as the other operations of the farmer would allow; or if the ground, when tilled, were let to the poor, or to persons who, as in Holland, would make it their sole business to attend to it, it would prove an immense benefit to the county, and furnish employment to the poor, especially to the female part of them, in every stage of its manufacture.* When the crop is tolerably good, the produce of a single acre may be estimated at 15*l.* on the field, at 20*l.* when it comes from the mill, at 60*l.* when spun into yarn, and at more than 100*l.* when wrought into cloth and bleached.

The attention of the farmer, and the industry of the poor, should therefore be directed, as much as possible, to a matter of so great and general importance. When this shall be the case, the minds of some of our landowners, who now depopulate their estates, will be more enlightened; and they will perceive that the riches or productiveness of their estates must depend more on the number of the people, than of the sheep, by which they are occupied. It is certain that neither pasturing, nor agriculture alone, can make any country so rich and prosperous by themselves as when they are conjoined with manufacture and with commerce. But these cannot be carried on in any place which does not abound with people.

As the culture of flax is not yet well understood by the greatest number of those who raise it in this county, it may be proper to give a few directions on the subject. Choice must then be made of suitable ground for it. A deep sandy loam, in good heart, clean and well pulverized, is the best. It answers well on rich ley ground, as it will be free from weeds; or after potatoes, or other cleansing crop.

The seed should be sown when the ground is neither too wet nor too dry, and harrowed in, like clover, with a short-teethed harrow, after the ground has been first broken and smoothed by another harrow. This will prevent any of the seed from going too deep, and make it come up equally. It is better to sow rather thick than thin; for if too thin it will branch, and

* In the higher parts of Perthshire, adjoining to this county, the ordinary farmers commonly pay all their rent by the sales of linen yarn.

the goodness of the crop will depend on its running into long fine stalks, without branches.

The ground, after sowing, should be well clodded, and then rolled, to prevent its being hurt by drought. When three or four inches long the crop must be carefully weeded, and as little injury as possible done to it by the feet or otherwise. The crop should not be allowed to ripen so much as is commonly done at present.* It should be pulled when the stalk begins to turn yellow, as soon as it has lost the blossoms, and before any of the bolls are hardened, and approaching to ripeness. To allow the seed to ripen would hurt both the crop and the ground. It is owing to the common error in this case, that flax has got the name of being a scouring crop. It is so when allowed to ripen its seed; but the reverse when pulled as soon as it has lost the bloom; as it ought to be when the seed is not to be saved. If the flax is fallen, it ought to be pulled the sooner, that it may not rot. The beets should be no larger than a man can grasp in both hands, and tied very slack with a few dried rushes.

No circumstance respecting the management of flax requires more attention than to water it properly. We generally keep it too long in the pond, or rather in the stream, which is injudiciously allowed to run over it. Instead of this, a canal seven or eight feet wide, and two and one-half feet deep, and of a length proportioned to the quantity, should be made and filled with soft water, three weeks before it is needed, in order to warm it by the sun; supplying, if necessary, any waste occasioned by evaporation.

The beets should be laid in the canal slope-ways, with the root-end uppermost, as the crop end is apt to breed vermin hurtful to the flax. It may be covered with divots, the green side undermost, and if not heavy enough to keep the lint under water, some stones may be laid above them, but the flax should not be pressed to the bottom. If the flax was pulled in proper time, and the water warm and soft, the rind

* The finer quality of Irish and foreign lint is ascribed to its being pulled before it is ripe. This, too, will add to the quantity. A writer in the Statistical Account (XVI. 527), after telling that 71 half stones were got from three lippies of seed, observes, that *it was pulled before it was fully ripened.*

will probably be sufficiently loosened in seven or eight days; and if on trial it is found to be so, it ought immediately to be taken out. It is always safer to give it too little, than too much watering; as the defect may be easily remedied by giving it the longer time upon the ground: whereas a mistake on the other hand cannot be repaired. When sufficiently watered, it feels soft to the gripe, and the *harle* parts easily with the *boon* or *show*, which last is then become brittle, and looks whitish. The coarser the flax, the sooner it is watered. Each beet when taken up should be gently rinsed in the pond, to clean it of any mud or nastiness.

If the flax is spread on poor ley, it will improve it greatly; and the water in which it has been steeped is also a valuable manure, which should be carefully carried or conducted to some ground that needs it, or weeds and straw, &c. thrown in to absorb it and make dung. The flax should be spread thin and equally, and handled tenderly. If it meet with a few hours' dry weather after spreading, it will be so much the better, as it will make the *harle* firm to bear the rain.

If at any time the flax shall be allowed to ripen so far as to harden its bolls (as at present), which it ought not, they should be ripped off before it is put in the water, as they make a rich and excellent food for cattle, mixed with boiled chaff, and should be carefully dried and preserved for that purpose.

Estimate of the Expense and Profit of 1-4th Acre under Flax.

	£.	s.	d.
Rent of ground prepared, usually the price of the seed	0	13	9
Two pecks and three-fourths seed, at 5s. per peck	0	13	9
Clodding and sowing	0	1	0
Weeding	0	3	0
Pulling and watering	0	4	6
Spreading and lifting	0	3	0
Breaking and scutching, at 2s. per stone	0	16	0
		<hr/>	
		2	15 0
Produce of a middling crop, 8 stone of 24 lbs. at 12s.	4	16	0
		<hr/>	
Profit	2	1	0
Or (per acre)	8	4	0

For Cambric and Fine Lawn.

The ground should be a rich, light, and dry soil, sufficiently pulverized by repeated ploughings when in a dry state, or after potatoes; and if near a wood, it will save trouble. The seed should be sown before the middle of April, about double the quantity usually sown for flax or lint. The ground should be rolled, if dry, and weeded when it is three inches long; after which forked sticks (about $1\frac{1}{2}$ inch thick) should be set at four or five feet distance, poles laid along these forks, about six or seven inches above the lint, and distant from each other two, three, or four feet, according to the length of the brushwood that is to be laid over them. This brushwood ought to be laid close and even, rising all about eighteen or twenty inches.

The lint should be pulled as soon as the seed is formed, or a few days after it is out of the bloom, before the lint turns yellow. If any be coarser than the rest, it should be kept separate. It must be pulled above the brushwood, and every handful laid upon it four or five hours to dry, if it is fine weather. Spread it out four or five days, putting it into a barn at night, and taking care that it get no rain, which would make it turn black. If it get wet it is better to leave it on the grass till dry, than to put it in wet. The bundles must be opened in the barn, or made very loose, to keep them from heating.

The pit for watering should be made long before it is used, and will be the better if it has a clean sward on the bottom; if not, some straw may be put under it. A small rill of clean water should run in and off the lint while in it. The pit may be six or seven feet broad, by three deep. Along the surface of the water, or a little lower on the two sides, run poles fixed down by wooden hooks of this figure, 7; and other poles across, with their ends under these, to keep all the lint down three or four inches under the surface of the water. The time of watering depends so much on the weather, and on the softness or hardness of the water, that no certain period can be fixed.

It may be proper to observe here that the introduction of the two-handed wheel, hardly known as yet in any part of this county, would contribute perhaps more than anything, to the speedy increase of our flax crops. This simple machine, now common in other parts of Scotland, would enable the same number of hands to spin the double of what they do at present, so that there would be a call for raising a double quantity, one-half of which would fall to be added to our present exportation, and bring a large yearly revenue to the county, besides enabling the poor to earn twice as much by spinning as they do at present. A small premium to the first, second, and third, who should use these wheels in any parish might have a good effect. After that, we may, perhaps, as in other places, go a step further, and think of spinning lint in a still greater quantity by the use of water machinery, which is now made to spin flax as well as wool and cotton.

Agriculture of the County of Somerset. By JOHN
BILLINGSLEY, Esq.

In the rich fertile country extending from Wincanton through Yeovil to Crewkerne, flax and hemp are cultivated in great abundance, the value of which is in proportion to the skill and spirit with which it is cultivated.

A crop of flax greatly depends both on the management of the land previous to sowing, and on the goodness of the seed.

To raise it to advantage it should be sown on new broke-up ground, ploughed once, and the surface hacked. It should be harrowed once before sowing, and twice after. Seed imported from Riga, and sold at about 14s. the bushel, is to be preferred; and the produce for two or three years may, without change, be sown again; April and the beginning of May are the months for sowing, and the quantity two bushels and a half per acre.

The great damage done to flax in its growth is by weeds; and if those people you employ to weed it be not careful, they may do more harm with their feet than their hands can do good. At any rate, the weeds must not be suffered to get

head of the flax, for if they do, it will become stunted in its growth, and get to no height.

When the plant is arrived at its growth, and is in full blossom, which in common seasons will be about the beginning of July, it is fit to be pulled, if the grower has a greater regard to the produce of the stalk than to the seed. However, it is a common practice to injure the whole crop for the sake of the seed; and to let it remain till the seed begins to ripen, so as to have both flax and seed. In this case the land suffers greatly, for flax seeded is a great impoverisher; but if pulled whilst in blossom, is an excellent preparative for turnips, which should always follow a flax crop instead of wheat. The great reason why the Irish, and, indeed, most foreign flax, is finer than the English, is because they pull it early, and sow particular spots purposely for seed; and, perhaps, it would be politic in government to grant a bounty on all foreign flax-seed sown in this kingdom, so as to reduce the price of foreign seed nearly to a level with our own; by this, the growth of flax (and with it the linen trade) would be encouraged, which has of late suffered considerable diminution by the restrictions to its cultivation imposed by landowners, under the idea of great injury done to the land by the culture of this plant.

After the flax is pulled, there are two methods of working it; the first is called *retting of it*, that is, steeping it in water in order to loosen the rind and separate it from the stalk; and the other is called *dew-ripening*, which is the spreading it on grass land, and by rain and dew producing the same effect. The early flax is mostly watered, which is done by laying the bundles in a pond or reservoir of soft water, and keeping them down by stones or any other heavy bodies. In the course of seven or eight days the rind will be sufficiently loosened, and they must be taken out of the water, spread abroad, and dried. In this part of the operation, great skill and attention are necessary, for if it be left in the water too long, the threads become rotten and useless to the manufacturer; it is, therefore, more advisable to take it out *too soon* than to leave it *too long* in the pits. Those who raise flax for the seed and stalk both go through an operation called *rippling*: this is, separating the seed from the stalk, by passing the flax through a

kind of comb before it is watered. These combs are made of iron, and the teeth are so close that the heads cannot pass through, and are consequently pulled off.

It is observable that the land on which retted flax is spread to prepare it for housing, is greatly improved thereby; and if it be spread on a coarse sour pasture the herbage will be totally changed, and the best sorts of grasses will make their appearance. Having myself cultivated flax on a large scale, and observing the almost instantaneous effect produced by the water in which the flax was immersed, I was induced some years ago to apply it to some pasture land by means of watering carts similar to those used near London in watering the roads. The effect was astonishing, and advanced the land in value 10*s.* per acre. This liquid is much superior to animal urine. The practice I therefore recommend to the cultivators of flax; possibly it may not be a new idea, but I believe it is seldom so applied.

The second method, namely, dew-ripening, may be carried on immediately after the flax is pulled, or it may be dried and stacked; and in the months of February or March the seed may be stamped from the stalk, and the latter spread on the grass lands to ripen.

The principal manures made use of by the growers of flax are the sheepfold, woollen rags, horn shavings, and lime; and it is no unusual thing for the farmer to find ground, manure, ploughing, and all team work; and the labourer to find seed, and all manual labour, dividing at the conclusion the produce in a way similar to that before stated in the *teazel* account. The expense and produce of an acre of watered flax may be thus estimated:—

<i>Dr.</i>	£. s. d.	<i>Cr.</i>	£. s. d.
To rent of land . . .	2 0 0	By 40 dozen of flax,	
To manure . . .	2 10 0	at 7 <i>s.</i> . . .	14 0 0
To ploughing . . .	0 8 0	By bounty 4 <i>d.</i> per st.	0 10 4
To hacking . . .	0 5 0	(allowing 1 <i>s.</i> for ex-	
To harrowing and roll-		penses).	
ing . . .	1 4 0		
	<hr/>		<hr/>
Carried forward . . .	6 7 0	Carried forward . . .	14 10 4

<i>Dr.</i>	£. s. d.	<i>Cr.</i>	£. s. d.
Brought forward .	6 7 0	Brought forward .	14 10 4
To seed and sowing (Riga)	1 15 0		
To weeding	0 10 0		
To pulling	0 6 0		
To halling to pits and watering. (N.B. The price of this de- pends on the dis- tance)	0 10 0		
To taking out of pits, halling, spreading, drying, and housing	0 14 0		
To breaking, swingling, and dressing 40 doz. at 1s. 4d.	2 13 4		
To tithe	0 5 0		
	12 0 4		
Profit	2 10 0		
	14 10 4		14 10 4

To this profit may be added the succeeding turnip crop and the improvement of the land by the manure; without these it cannot be considered as very lucrative, for it is precarious; and if a dry season follow the sowing, it frequently happens that the flax does not get to any height, and is scarcely worth pulling. Some people may think the expenses overrated; but if they consider that the calculation is made under the idea of an acre *statute measure*, and also that it includes beer, tools, and many other trifling articles of expense, they will be disposed to acknowledge it to be correct; at least, I can say that it is drawn from my own experience of its truth.

*Agriculture of the county of Lincoln. By the SECRETARY
of the BOARD.*

FLAX.—Much cultivated at Swineshead; grass land fresh is preferred. Plough for it once, and harrow five times; again

with what they call an ox-harrow, with a batten set on edge under it, and drawn over to level and pulverize; then sow two bushels an acre, Baltic seed, at 10s. 6d. a bushel. Harrow two or three times. Pick the broken sods, and lay in furrows. Very little weeding. Mr. Sumpter, of the Griffin, of this place, in twenty-three acres, has weeded only to the amount of eight men for one day. The beginning of August it is pulled by the day, and costs 12s. an acre. Tied in sheaves, the size of a man's thigh: next day taken to the dyke to be watered, and the better the flax the longer it is in the water; from five days to fifteen; ten on an average. Cart it to grass eddish, where it lies till a shower comes, which is necessary; turn it twice. Gather and tie in *bottles*, five or six in one. Cart it to the barn or a stack. If *taid*, it will not do for seed; and the price of the seeded flax is 1s. a stone less. Breaking and swingling, 2s. a stone. When it is ready for market, price 8s. a stone. Seldom any pullings, called *snufflings* of flax. This crop is thought to hurt the land. Both it and hemp are damaged by hedges or trees. It is common to sow turnips immediately after it; but Mr. Sumpter, on his own land, ploughs thrice, and sows wheat, getting fine crops.

Account of an Acre.

	£.	s.	d.
One ploughing	0	5	0
Harrowing	0	5	0
Ox-Harrow and batten	0	2	6
Seed	1	1	0
Sowing	0	0	6
Harrowing	0	5	0
Picking	0	2	0
Weeding (if not sward ground) 10s.	0	5	0
Pulling	0	10	0
Dyking and spreading, 5s. a bushel	0	10	0
Carting	0	5	0
Twice turning	0	6	0
Gathering	0	6	0
Breaking 40 stone	4	0	0
Carried forward	8	3	0

	£.	s.	d.
Brought forward	8	3	0
Carting to barn	0	6	0
Carrying out and expenses	0	6	8
Rent	4	4	0
	<hr/>		
	12	19	8
	<hr/>		
Produce, 40 stone, at 8s.	16	0	0
Turnips after 2 0 0			
Deduct tillage, &c. 0 10 0			
	<hr/>		
	1	10	0
	<hr/>		
	17	10	0
Expenses	12	19	8
	<hr/>		
Profit	4	10	4

Most profit when seeded, for the crop is from twelve to fifteen bushels, at 10s. 6d.; but, in that case, something is to be deducted from the price of the crop, but not always, as it is the best flax that stands for seed. Getting the seed adds 20s. to the expense.

At Haxey, in Axholm, they often sow it upon sward land, but more commonly on clover ley or wheat stubble. Plough between Christmas and Candlemas; three or four harrowings, and rolling fine; if a fine mould, harrow in the seed on this one earth; if not, skim it with plough very thin to make it fine. Sow two strikes an acre; plough it; skim it half in, and half on top, both ways, as opinion leads. Weed it carefully on their knees. Pull it the beginning of August for white line; sometimes leave it for seed, especially if a slender crop. Bind and dyke it; leave it in for about ten days to a fortnight; if very warm, eight days; much treading twice a day in the pit. Grass it on barley stubble, or an eddish, for a month, and to six weeks; turn it once or twice. *Tuffle* it; that is making it in a loose sheaf, open at bottom. When dry, bind it in bottles, two or three in one. Barn or stack it; after harvest, and in winter, break at 2s. a stone. Ready for sale to the heckler, at 8s., 9s., 10s. 6d., a stone; some 11s. last year; average 8s. Harrow off the rubbish, and plough twice for wheat.

Account of an Acre.

	£.	s.	d.
One ploughing	0	4	0
Harrowing and rolling	0	4	0
Seed and sowing	0	18	0
Skimming	0	4	0
Weeding	0	13	0
Pulling	0	7	6
Leading and retting, &c.	0	10	6
Grassing, &c.	0	5	0
Leading, &c.	0	3	0
Breaking 30 stone, at 2s.	3	0	0
Rent, hired for it particularly	3	0	0
Tithe	0	8	0
	<hr/>		
	9	17	0
	<hr/>		
Produce, 30 stone, at 8s.	12	0	0
Expenses	9	17	0
	<hr/>		
Profit	2	3	0

If on the sward, the rent will be 40s. more; and the crop will be from 40 to 60 stone; about 50 good.

At Butterwick, in the Isle, their best wheat follows flax; the crops of the latter 50 stone.

At Garthorpe, on fresh land, flax produces 50 stone; they sell it, as it stands, for 6*l.* or 7*l.* an acre.

To the Secretary of the Bath Agricultural Society, by a Dorsetshire Gentleman, 1781.

MR. RACK,

I BEG leave to trouble the Gentlemen of the Bath Society with a few remarks on the culture of hemp and flax, as being articles of great national importance, and therefore well worthy their attention.

I have often observed, that the greater part of those rich marshy lands lying to the west of Mendip-hills, are as badly managed as any in this county, or perhaps in the kingdom. The farmers, whose property it is, seem content with the produce it affords them without much cultivation or labour; and

appear to be utter strangers to its real value, or the profits that would speedily arise from a spirited and judicious mode of management, were it but adopted. Almost any method of cultivation different from the present, would in point of private advantage be infinitely preferable. But were these lands appropriated to hemp and flax, they would prove highly advantageous both to the landholders and the public at large.

It is well known, that soils naturally rich and fertile will produce hemp and flax in abundance; and as these are ameliorating crops, they will not, if cut without seeding, impoverish the land. And as the best crops of flax are raised from foreign seed (which is easily procured cheaper than we can raise it) there is the less occasion for suffering it to seed in this country.

The vast quantities of hemp and flax which have been raised on lands of the same kind in the Lincolnshire marshes, and the fens of the Isle of Ely and Huntingdonshire, are a full proof of the truth of my assertion; and a convincing argument of the superior wisdom of the farmers in those places. This will appear in a stronger light, when we consider that the other commodities raised on such land sell at higher prices than in this county.

Many hundreds of acres in the above-mentioned places, which for pasturage or grazing were not worth more than twenty or twenty-five shillings per acre, have been readily let at four pounds the first year, three pounds the second, and forty shillings the third. The reason of this supposed declining value of the land, in proportion to the number of years sown with flax, is, that it is usual with them to seed it for the purpose of making oil, that being the principal cause of the land being thereby impoverished.

It will not appear strange, that such rents should be given for lands which produce from fifty to seventy stone per acre, which, when dressed, sell on the average from seven to nine shillings a stone, or twenty-four pounds value per acre.

But the profitable growth of hemp and flax is not confined to rich soils. Experience hath evinced, that they will grow well on poor sandy land, if a little expense be bestowed in manuring it.

Spalding Moor, in Lincolnshire, is a barren sand, and yet with proper care and culture it produces the finest hemp in England, and in large quantities.

In the Isle of Axholme, in the same county, equal quantities are produced; for the culture and management of it is the principal employ of the inhabitants; and, according to Leland, was so in the reign of Henry VIII.

In marsh land, the soil is a clay or strong warp, thrown up the river Ouse, and of such a quality, that it cracks with the heat of the sun till a hand may be put into the chinks or openings; yet if once it be covered with the hemp or flax before the heats come on, the ground will never crack or open that summer.

When the land is sandy, they first sow it with barley, and the following spring they manure the stubble with horse or cow dung, and plough it under. They then sow their hemp or flax, and harrow it in with a light harrow having short teeth. A good crop destroys all the weeds, and makes it a fine fallow. As soon as the flax is pulled, they prepare the ground for wheat. Lime, marle, and the mud of ponds, is an excellent compost for hemp lands.

The quantity of hemp and flax yearly imported into this kingdom was, about the year 1763, estimated at about eleven thousand tons;* and I will venture to assert, that all this quantity might be grown at home, without making a scarcity or considerably enhancing the price of any article of our present produce, or occasioning any want of hands for carrying on our manufactures. On the contrary, I am induced to believe it would occasion a considerable increase of people, by inviting numbers from the continent to come and settle amongst us. And as the hemp and flax we import come from countries where the balance of trade turns in their favour, it would be a great national advantage.

It ought also to be remembered, that the hemp raised in this kingdom is not of so dry and spongy a nature as that we have from Petersburg. The only objection that our ropemakers urge against using English hemp is, that it takes less

* To raise this quantity at home would require about 60,000 acres of land.

tar than the foreign to manufacture it into cordage. But as tar is cheaper than hemp, they use this argument only because there is less profit arises to them from working it. This is therefore a substantial argument in its favour. And this inference may be justly drawn from the objection, viz., that the cordage made of English hemp, when compared with that of the same dimensions worked with foreign, must be stronger in proportion as there is more hemp and less tar in it, provided there be a sufficient quantity to unite the fibres together; hemp being a stronger and more durable substance than tar.

One peculiar advantage attending the cultivation of hemp and flax is, that a crop of the former prepares the land for the latter, and therefore a crop of hemp is a clear gain to the farmer. That these plants impoverish the soil is A MERE VULGAR NOTION, DEVOID OF ALL TRUTH. THE BEST HISTORICAL RELATIONS, AND THE VERBAL ACCOUNTS OF HONEST INGENIOUS PLANTERS, CONCUR IN DECLARING IT TO BE A VAIN PREJUDICE, UNSUPPORTED BY ANY AUTHORITY; AND THAT THESE CROPS REALLY MELIORATE AND IMPROVE THE SOIL.

Therefore as hemp and flax can be raised at home so much to the improvement of our lands, the employment of our poor, and the interest of the nation at large, I am very solicitous that this subject may come seriously under the consideration of your Annual Meeting, and receive all possible encouragement from your public-spirited and truly laudable Society.

At the Annual Meeting of the Tenants of the Earl of Erne's Estate in Ireland, Capt. Skinner, the benevolent and zealous Secretary of the Irish Flax Improvement Society, addressed the meeting; from whose speech I take the following brief and important extract:—

Three years since the quantity of Irish flax grown was computed to be about 25,000 tons. The increase of value upon this amount effected through the exertions of the Society was, at the least, taking a general average, 10l. per cent., which would gain a sum of 250,000l. additional in circulation among our farmers. (Loud cheers.) But, my Lord Erne, it is now understood by calculations, there will be fully 14,200 tons of

flax more in the markets this season than there was three years since, which at the low rate of 45*l.* a ton value would give the sum of 643,050*l.*; and this added to the above additional value makes it clearly appear that fully a million of money above the usual expenditure will be retained in the country and expended in the home market this season, contributing thus to the welfare of the community at large. (Hear.) But to prove, my Lord, that this calculation is not fallacious, we have positive corroboration of the fact, by taking the official return of imports of foreign flax for the last four years, which shows a gradual decrease, and in a ratio commensurate with the Society's successful exertions to increase the growth and promote its better preparation at home. It was stated before a committee of the House of Commons in 1840, that the amount of the importation of foreign flax from all the Continent furnishing into Great Britain was 80,000 tons; in 1841 it was much under this amount; in 1842 it was in round numbers but 67,000; and in 1843, 55,000 tons. (Hear, hear.) Here we have facts substantiating the former views that we are gradually becoming more independent of the foreign supply; and I can affirm on the experience of the past and practical knowledge acquired by an agriculturist abroad and at home, that no reason exists whatever why the whole quantity of the raw material required to keep our manufactories in full employment may not be produced at home both in quantity and quality, and thus the great drain of wealth, the purchasing of it from foreign countries (countries, too, with whom we have no reciprocal transactions), may be checked and circulated at home to the enrichment of our farmers, and weal of Ireland. (Cheers.) Let there be, therefore, no cessation of exertion to raise the supply required, and be assured that we have both the climate and the soil to grow it to any perfection, if but due skill and attention are given to it. But look at these specimens of flax, and those beautiful fabrics which I brought with me, as samples of what the Irish farmer can produce, and the Irish weaver can turn out. (Hear, hear.) No country in the world can surpass them. This linen of 2*S*vo was woven near Lisburn, and this cambric at Lurgan—the prize pieces were even finer. The linen that obtained the medal of the Royal Agricultural Society

was 30vo, and will be presented to her Majesty. At the recommendation of the Flax Committee, the Royal Agricultural Society gave premiums for yarns at their late meeting, the object of which was to try if the description of yarn made use of in the manufacturing of cambrics could not be furnished at home. (Hear, hear.) It is of a quality the mill-spinning cannot produce, and some 30,000*l.* worth has now to be imported annually for the cambric factories at Lurgan, Warringstown, and elsewhere, that are so successfully competing with and excluding the French and other Foreign countries from the English market. (Loud cheers.) The result was most gratifying. Some forty specimens of spinning on the old system were sent in, and the lowest number of them was 23 hanks to the lb., and up so high as 41 hanks. Now from 16 to 30 hanks to the lb. is what is required, and if the count could be depended upon, and quality be equal, 40 hanks at any time would find a good market, and the poor industrious woman make the value for her husband's fine flax of a lb. not worth 6*d.* amount to 20*s.* or 30*s.* (Cheers.) New resources are thus opening out for our people, and those of this fine country becoming daily further developed. In conclusion, I would just direct attention to these flax machines, which Lord Erne has kindly taken as models for you. (Hear, hear, and cheers.) The beetling one will save you much labour, and no mill can do its work so well—the rippling combs, I hope also to hear, will be in great use next season, even if you can afford to throw away the bolls of your flax, then take them off, as no flax can be properly handled with them on. It should be done at the time of pulling, or if the flax is dried and stacked, then they must be thrashed out carefully like corn, but without untying the beets.

Statement of Mr. HENDERSON, Lisdillen, County Derry, on his mode of Managing Flax.

The Earl of Erne introduced to the meeting Mr. Henderson, of Lisdillen, county of Derry, who won the gold medal, the Royal Agricultural Society's highest premium, at the recent Belfast meeting—his flax beating all Ireland. (A sample of

the prize flax was produced, and for colour and texture was certainly very beautiful.)

“The first valuable information on flax, obtained here, was from a Dutchman, Mr. Boss, brought here by the late Irish Linen Board. Mr. Boss was correct in all his principles, while he was evidently not quite an adept in practice; for, in all the lots of which he undertook the management, he totally failed: he not only failed to produce superior flax, but he destroyed all he treated. This ill success arose from applying the Dutch system, in *every particular*, in a soil and climate *materially different*; whilst the same system, with such modifications as those differences suggest, has proved useful to all who have attended to it. I will state more clearly by taking each part under a separate head.

“*Land.*—I have ever observed the best flax to be grown on crofting ground, sound, dry (but not gravelly), and deep, on a clay subsoil. Loam and holming lands produce a splendid appearance, whilst growing, but the yield is rarely equal to the appearance, and still more rarely do such lands give the fine fibre now so much valued. On lands, saturated with either underground or surface water, good flax cannot be expected. There cannot be a doubt, that thorough-draining and subsoiling will enable this country to produce largely such flax as can now be procured only in small samples and isolated instances. I have no doubt that nine in ten of the failures of this crop arise from the filtration of water too near the surface, and that of the numerous other reasons for missed crops usually assigned, almost every one is imaginary.

“*Rotation.*—Without *method* there cannot be success. Different soils require difference in rotation, and suit different crops. I will speak only of that I use. My farm is a strong and pretty deep clay croft, and has proved well suited to flax; therefore, I use that crop more frequently (say twice in the course) than will be generally found advisable. First, potatoes or turnips drilled, well cleaned, manured, and limed; second, wheat; third, flax, with which clover and grass-seeds are sown; fourth, hay, the ground being top-tossed with soot; fifth, graz-

ing ; sixth, grazing ; seventh, oats ; eighth, flax ; and then the rotation re-commences.

“ *Preparation.*—After wheat, one ploughing is sometimes sufficient, but two are generally safest ; one in autumn, and again before spring. After lea-land oats, two ploughings are indispensable, and a third is frequently advisable, for the *land must be perfectly pulverized, and cleared of all roots, of every sort, or no crop.* I do not plough deeper than the vegetable mould.

“ *Sowing.*—I sow early in April, so soon after the first of the month as the weather permits ; I always find the earliest sown the best crop. I do not await perfect dryness in the soil ; I prefer its being somewhat moist, that the seed may vegetate quickly. I sow from 36 to 38 gallons (old Irish measure) to the Cunningham acre (or nine imperial pecks to the statute acre), of good and clean Riga seed ; when I have sown more, I thought my crop too thick, but thin sowing never gives fine flax. The ground being perfectly pulverized and cleaned, I give a turn of the roller, and sow on the rolled ground. Where clover and grass seeds are sown with flax (after wheat), the person who sows them follows him who sows the flax-seed, and both are covered with a double turn of the grass-seed harrow, which is light but broad, the teeth thickly set and short. I have ever found rolling the crop *after* sowing, to be injurious.

“ *Weeding.*—If weeds come, they must be drawn ; but if the plough, the hoe, and the hand, have been sufficiently applied to the green crop (potatoes or turnips), and the roots have been *all* gathered previous to sowing the flax, the weeding the growing crop will seldom be necessary ; I rarely have to do it ; still, if there are any weeds, they must come away.

“ *Ripening.*—I have found the test recommended by Mr. Boss to ascertain the degree of ripeness that gives the best produce, with the finest fibre, perfect. It is this :—Try the flax every day, when approaching ripeness, by cutting the *ripest* capsule, on an average stock, across (horizontally), and when the seeds have changed from the white milky substance, which they first

show, to a greenish colour, pretty firm, then is the time to pull. The old prejudice, in favour of *much* ripening, is most injurious, even as regards quantity; and the usual test of the stalk stripping at the root, and turning yellow, should not be depended on. Where there is one man that pulls too green, five hundred over-ripen.

“Pulling.—I use the Dutch method, say, catching the flax close below the bolls; this allows the shortest of the flax to escape. With next handful, the puller draws the short flax, and so keeps the short and the long each by itself, to be steeped in separate ponds. It is most essential to keep the flax even at the root end, and this cannot be done without *time* and *care*; but it *can* be done, and should always be done. The beets should be small, evenly sized, straight, and even, and should never be put up in stooks or windrows, but taken to the pond the day they are pulled, or the day after, at longest, especially in bright weather; for the discoloration produced by the sun, on green flax, will never be removed till it goes to the bleacher, and will give him some trouble also.

“Steeping.—Flax is subject to injury from neglect, in every process, but *in this especially*. The water brought to the pond should be pure from all mineral substances, clean and clear. The water of large rivers is generally to be preferred, but spring water, which has run some hundred yards, becomes soft, and will have deposited any mineral impurities it contained. Immediately from the spring, it seldom does well. If the water be good and soft, it is injurious to allow it to stagnate in the pond, before steeping. I put in two layers, each somewhat sloped, with the root end of each downwards: one layer is said to be safer, and perhaps is so, though I have tried both, and seen no difference. It should be placed rather loose than crowded in the pond, and laid carefully, straight and regular. Having an abundant supply of water, I do not let it into the pond till the first layer is in. I cover with moss sods (from the turf banks), laid *perfectly close*; the sheer of each fitted to the other. Thus covered, it never sinks to the bottom, nor is it affected by air or light. It is generally watered in 11 to 13 days. A good stream should, if possible, always pass over the

pond; it carries off impurities, and does not at all impede due fermentation—flood and all impure water should be carefully kept off. The Dutch test of being sufficiently watered is certain and perfect, at least I never found it otherwise. It is this:—Try some stalks of average fineness, by breaking the woody part in two places about three inches apart, at the middle of the length; catch the wood at the lower end, and if it will pull out (downward) for those three inches, freely, without breaking or tearing the fibre, it is ready to take out. This trial should be made every day, after fermentation subsides, for sometimes the change is rapid. Flax is more frequently injured by too little than too much of the water. Great care and neatness are necessary in taking out. Broken or crumpled flax will never reach the market. Spread the day it is taken out, unless it is *heavy* rain—light rain does little harm; but, in any case, spread the next day, for it will heat in the pile, and that heating is destructive.

“*Spreading.*—It should be spread even, straight at its length, not too thick, and well shaken, so that there shall be no clots; indeed, if possible, no two stalks should adhere. I have ever found it injurious to keep it long on the grass; it is in the steep the wood is decomposed; on the grass the fibre is softened, and the wood little, if at all, affected. I rarely let it lie more than five days, sometimes only three—this year it had only three days, and I never had better flax. It should never, if possible, be spread on the ground flax grows on; it claps down, and the clay and weeds discolour it; clean lea, or lately-cut meadow, is the best.

“*Lifting*—Like all other operations, requires care and neatness, to keep it straight to its length, and even at the roots. This operation is too frequently hurried, and coarsely done.

“*Drying.*—If the steeping and grassing have been perfect, flax should require no fire; but, to make it ready for breaking and scutching, exposure to the sun should be sufficient; but if the weather be damp, the flax tough, and it *must* be wrought off, then it must be fire-dried. Such drying is always more or less injurious; the flax is absolutely burned before it is dry.

All who can afford it should keep such flax over till the ensuing spring or summer, putting it dry into stack, then it will work freely *without* fire-heat.

“*Breaking*.—Vertical wooden rollers, lightly grooved, break flax better than any other method I have yet seen. Very little of our flax is bruised sufficiently, and the consequent waste in scutching is serious. In this, also, it should be kept straight and even at the roots.

“*Scutching*.—On scutching I need say little. The slovenly wasteful way it is usually performed is but too obvious, and cries aloud for amendment; even in the very best mills, in this part of the country, the deficiency is evident, when compared with the Down and Armagh flax. The remedy is difficult, for the system must be altogether changed. But changed it must be, or the present heavy loss be perpetuated. I have good hope that the Belfast Association will effect a reformation of this evil.

“I omitted, in speaking of steeping, to notice the most particular cause of injury, say the exudation of water from the sides or bottom of the pond. Stripe and discoloration are mostly imputed to the quality of the water *brought* to the pond; whilst in nine cases of every ten, the water *oozing from the sides and bottom* of the pond itself is the cause. Even if such water was pure, which it seldom is, it is injurious; but, when impregnated with iron or other minerals, it does immense harm. If such ponds *must* continue to be used, the injury may be partially amended by draining around the sides and ends, at six or eight feet distance, and eighteen inches *deeper than the bottom of the pond*, and filling the drains with stones. No other thing I know of does such extensive injury as this springing of water within the pond.”

*Letter from MARSHALL and Co., Leeds.—Addressed to
J. WARNES, Esq.*

SIR,

As we import a considerable quantity of flax yearly from Belgium and Holland for our establishment here, we are, of course, much interested in the success of any plan for increasing the quantity grown in England. We have lately paid a good deal of attention to the different modes of cultivation, &c., of the plant abroad, with the view of ascertaining which was the best, and of then endeavouring to get a better system introduced in those parts of England where flax is now grown, so as to make the flax crop a more valuable one to the farmer, and induce him to extend the cultivation of it.

We believe, both the soil and climate are suitable for the plant; at one time the flax grown in the East of Yorkshire was of as good quality as that grown in Belgium; but the growth since then has fallen very much off, chiefly owing to the farmers managing the cultivation and preparation of the flax in a slovenly manner, and partly owing to the landlords having a prejudice against the crop as an exhausting one, which would not be the case if your plan was adopted of using the seed for feeding cattle on the farm where the flax was grown.

The demand for the finer qualities of flax, grown in Belgium, Holland, and Ireland, has been increasing for the last three or four years, and at the same time there has not been a corresponding increase in the quantity of land sown with flax; hence the prices have risen considerably, and we think offer a great inducement to the English farmer to introduce largely the growth of this crop.

The formation of such a Society as you describe will be of great assistance to the farmers; and we shall have great pleasure in forwarding your views, by communicating any information that we have acquired, with regard to the management of flax, &c.

We remain, your obedient servants,

MARSHALL & Co.

Leeds, November 28th, 1842.

Letter from J. B. EDMONDS, Esq., Stonehouse, Plymouth, 1843.

SIR,

I have lately read with much pleasure, a report of a spirited Meeting which has been held at Norwich, on the cultivation of flax, and trust I shall not be deemed intrusive by offering a few remarks on the management of this crop, the result of long experience. having been myself a cultivator of the same, to a *large extent*, for a period of sixty years. From a slight knowledge I have of the Norfolk soil, I am of opinion that it is admirably calculated for the growth of flax, if proper attention be given to it; but it is a very precarious crop, and a sandy soil is the *most certain* for it, but when a good crop *can* be obtained from *strong land*, it is best in quality.

The first essential point to be observed is, that due care be taken to procure *good seed*; and to prevent disappointment in this instance, the most certain way is to get a barrel direct from Riga, through a merchant at London, where it is annually imported, generally about Christmas; but I have been in the habit of procuring it from Bridport, in Dorsetshire, being the chief place in the West of England for the manufacture of hemp and flax goods, therefore the growers are of course particular as to the quality of the seed they sow, it being procured sooner or later from Riga.

When a superior sort of seed is obtained, it may be preserved a few years, by sowing yearly a quantity (in change of soils) *thinner* than the usual crop, to make it produce more seed, but after the third or fourth year, it will be found to degenerate. When Riga seed is purchased, it is generally found to be very foul, full of weed seeds, so that it is necessary to be cleansed by means of a sieve; nor is it usually *productive* the *first* year it is sown in England, but very good the second season. Many years' experience has proved to me, that the best crops of flax follow the *severest* winters; the same holds good, I believe, in Flanders. Flax should never be sown after *turnips*, for should the *produce* be great, the *quality* will be inferior. The best land for its growth is after *grass*, to be

ploughed *VERY* shallow early in the winter, and after being rolled with a very heavy roller, to be chopped over with mattocks, sufficiently deep to cover the seed with harrows, then the clods to be broken fine with beetles, and rolled with a *light* roller. Crops thus served are commonly the best, and cleanest from weeds. The next best is after a lying-down crop of wheat; and the next, after potatoes, the land being folded with sheep in January and February. Flax will also succeed after barley, oats, and everything but *turnips*, and the turnip kind. The same land should not be sown with flax oftener than once in seven or eight years, nor should land be thus applied that has been *limed* within a few years.

If, as the season for flax-growing approaches, it be very dry, the land should be well kept down by harrowing and rolling, in order to preserve its moisture, that the plants may come up all together, which is a great point gained. It is a mistaken opinion that hemp and flax *impoverish* land—from long experience I have found the contrary; these are crops that make a greater return, as to manure, than any *corn crop*; and when flax is spread on grass to be ripened, the quantity of grass is doubled in a short time,—the effect, I imagine, of the oil contained in the flax. When it can be obtained, good old earth is an excellent manure for flax, to be laid on in frosty weather, but not when the weather is wet. It may be well to remark, that no crop is so desirable with which to grow grass seeds as flax, as, in drawing the flax, the roots of the grass are loosened, and thereby encouraged to a great degree, the same being often injured by a corn crop. There is also great advantage to be gained to the farmer by sowing turnips after a flax crop, which should be done immediately after the land is cleared and ploughed; thus turnips will be produced almost equally good, if not so large, as if flax had not been grown, and will be found useful in the spring, after other turnips are consumed.

J. B. EDMONDS.

Stonehouse, Jan. 28th, 1843.

P.S.—As an instance of the risk of sowing flax after turnips, I will mention, that a friend of mine, some years since,

had a fancy to sow a field *alternately* with turnips and white peas, from each of which he had a good crop; in the following year he appropriated the same field to *flax*, but at the harvest his field was in *stripes*, the land on which the peas grew having produced *good flax*, whilst the flax which followed the *turnips* proved good for nothing.

Letter from MARSHALL and Co., Leeds.—Addressed to
J. WARNES, Esq.

SIR,

We are in possession of your letter of November 30th, and have much pleasure in learning that we can assist in promoting your object of introducing the cultivation of flax into Norfolk, which we are convinced will be a great benefit to your neighbourhood.

We have received the samples of flax-straw, and your pamphlet, in which we observe you chiefly draw the attention of the farmers to the value of the flax crop as to its produce in linseed.

“This is no doubt a very valuable part of the produce of this crop, and, in an agricultural county, where so much linseed is used, and where at present there is a scarcity of good linseed, this argument would be very likely to induce the farmers to take up flax-growing; but when it was once established, we think it will be found that the cultivation of the plant for the fibre is of far more importance, and that by sowing seed suitable to produce fine flax, and sowing it thick (say 3 to 3½ bushels per acre) the farmer, though he sacrifices something in the value of seed produced, will get a more remunerating crop from his land than he now obtains. From calculations which we have obtained of the cost of growing flax in part of Belgium, we find it to have been lately 11*l.* to 16*l.* per acre, and the value of produce 19*l.* to 28*l.*: at the same time we must remark, that the price of flax has been very high, and that the cost of growing the flax in England would most likely be different.

“The best system of retting abroad is practised at Courtrai,

in Belgium. There the flax, after pulling, is set up to dry on the field in long stooks; when thoroughly dried, it is either stacked or put away in a barn during the winter. In spring, the seed is taken off, and the flax retted in the river Lys. In retting, the flax is tied up in bundles of about 12 lbs. each; then packed up in a crate or large wooden frame, which, when full, is launched into the river, and sunk with stones below the surface, but not touching the bottom; the retting takes from five to seven days. The flax is then taken out, dried, and if of good quality, laid by till the following spring, when it is spread on the grass to bleach. This flax does not come to market till the second year after it was grown—but this is only the case with the finest flax. In general, the bleaching immediately follows the retting; but keeping the flax-straw either before or after retting decidedly improves the quality.

The effect of retting in running water is to produce flax of a light yellow colour. This always fetches a higher price in the market; but the same effect is produced in large ponds or lakes of fresh water. If there are such in your neighbourhood, we should recommend your adopting this mode of retting.

The other mode of retting more usually followed is in ditches of stagnant water, and the result is flax of a dark grey colour. The bundles are laid in one row, overlapping the next, and then weighted with sods, stones, &c.

The chief difficulty in retting the flax is to decide the exact time when it should be taken out of the waters: this is a very nice point—as by leaving it in the water a few hours too long, it may be over-retted; therefore we should recommend you in the first instance to follow the example of the Irish Society, either to send one or more young men to study the retting process abroad, or to engage a Belgian to superintend this stage of the preparation of the flax.

MARSHALL & Co.

Leeds, Yorkshire, 1842.

PROFITS OF GROWING FLAX.

The following statement was read at an Agricultural Market Dinner, at Market Hill, Armagh, on the 14th December, 1843.

Produce of three Statute Acres of Flax.—100 stones at 15s.—75*l.*; each stone calculated to produce 5½ lbs. of dressed flax—in all 550 lbs.—spun to 30 hanks to the lb., will produce 16,500 hanks. About 158 females will be employed 12 months in spinning, at the rate of two hanks per week (six working days); wages for spinning each hank, about 1s. 8*d.*, or nearly 7*d.* per diem for each spinner. This quantity of yarn would make 210 webs of cambric pocket-handkerchiefs, each web containing five dozen. About 18 weavers would be 12 months weaving this quantity, allowing each man a month for each web (17½ weavers exactly); wages per web 2*l.*; or from 9s. 6*d.* to 10s. per man per week. About 40 females would be employed 12 months in needlework (hemstitch or veining); each could do one handkerchief on each working day; wages, 8s. per dozen, or 8*d.* per day. The goods, when finished, would be worth 2*l.* 10s. per doz.

158 spinners 12 months, or 52 weeks, at about 3s. 4 <i>d.</i>	
per week	£1,369 6 8
18 weavers 12 months, at 24 <i>l.</i> per annum	420 0 0
40 needlewomen, 52 weeks, at 4s. each per week	426 0 0
<hr/>	
216 persons employed	
Amount of wages	£2,195 6 8
Cost of flax	75 0 0
	<hr/>
	£2,270 6 8
Value of 1050 dozen handkerchiefs, at 2 <i>l.</i> 10s. per dozen	£2,625 0 0
	<hr/>
Profit	£354 13 4

On saving of Flax Seed. From Irish Farmer and Gardener's Magazine.

Mr. Wolstenholme sowed, early in April last year, fifteen Irish acres with Dutch seed of excellent quality, purchased

from Messrs. Toole and Co., four bushels to the Irish acre. These fifteen acres produced 345 bushels of excellent seed, which were sold to average—

7s. 6d. per bushel, making	£129 7 6
He has in flax produce, already scutched 850 st. of 14 lbs.	
To scutch, at least 200 do.	
	—————
	1050 stone :
Or 6 tons, 11 cwt., 1 qr., for which he has been offered	
60l. per ton, amounting to	393 15 0
	—————
Being for the fifteen Irish acres	£523 2 6
	—————
Or, per acre	£34 17 6
	—————

The average value of Irish flax may be at present estimated at from 45l. to 50l. per ton—so that, instead of the flax having been injured by the saving of the seed, the crop has, by good management, produced an article exceeding in value from 20 to 33½ per cent. the average of the country.

Mr. Wolstenholme has this year sown forty Irish acres with flax, viz.—

35 acres with seed of his own saving.

2 with Riga.

3 with Dutch.

The seed of his own saving was sown three or four days after the foreign, but came up before it, a much stronger plant and thicker in the ground, although the same quantity of each was grown—and to this moment promises to be a superior crop.

Computing that 100,000 Irish acres are sown, and that the crop of seed be but 20 bushels per acre, and the price only 6s. for crushing, still the value of the seed crop would be 600,000l. ; and if the crop of flax on 100,000 acres yielded only 7 cwt. per acre, or 35,000 tons,

This quantity at 45l. would be	£1,575,000
at 50l.	1,750,000

And, therefore, the increased value, if at 60l., by superior management, would be a further gain of from 350,000l. to

525,000*l.*, thus making on the crop an annual increase of income of one million or upwards, from the flax crop in its present limited extent ! But there can be little doubt that the increased stimulus which would be thus given, by the advantageous results of improved management in the cultivation of flax, would greatly extend its growth over the south and west of Ireland, where the soil is in many places admirably adapted for it ; and *as it has been clearly ascertained that flax is not at all an impoverishing crop*, and, moreover, is peculiarly suited for laying down ground with clover, it does not appear unreasonable to suppose that the extent of land under it in this country may be more than doubled, and the national advantages derived therefrom proportionably increased.

It appears, in fact, but necessary, that other landed proprietors should follow the example of the estimable and intelligent gentleman who has been referred to, and who assured the writer that he would have much pleasure in giving every information on the subject to those at a distance who might desire it ; he has already kindly afforded persons in his neighbourhood the means of profiting by his example. Ireland, from the climate, soil, the abundance of water she enjoys, and the extent of her population, is probably better adapted than any other country for the cultivation of flax and the successful prosecution of the linen trade. If her sons do but their duty, she cannot but take the lead of all other nations in this important manufacture.

L. C.

Dublin, 24th May, 1836.

From the Library of Entertaining Knowledge.

There is scarcely any plant which is found to be so little affected by difference of soil and climate as the flax plant ; and accordingly one species, with all its characteristics unaltered, flourishes in the cold as well as the temperate regions of Europe, in North and South America, in Africa, and in Asia. By the Hindoos it is cultivated for its seed alone, from which

oil is expressed, and the stalks are thrown aside as useless,* but in every other country where it is raised, its fibres are woven into cloth.

The common flax (*linum usitatissimum*) is an annual plant, which shoots forth in slender upright fibrous stalks about the thickness of a crow-quill.—These stalks are hollow pipes, surrounded by a fibrous bark or rind, the filaments of which, divested of all extraneous matter and carefully prepared, are the material of cambric, linen, and other similar manufactures. The leaves, placed alternately on the stem, are long, narrow, and of a greyish colour. When the plant has attained the height of about two and a half or three feet, the stem then divides itself into slender foot-stalks, which are terminated by small blue indented flowers; these produce large globular seed vessels, divided within into ten cells, each containing a bright slippery elongated seed.

Although flax is easy of growth, its quality depends very much on fitness of soil and situation. Low grounds, and those which have received deposits left by the occasional overflowing of rivers, or where water is found not very far from the surface, are deemed the most favourable situations for its culture. It is attributed to this last circumstance that Zealand produces the finest flax grown in Holland. Preparatory to the cultivation of this plant, it is not necessary that the ground should be very deeply furrowed by the plough, but it should be reduced to a fine friable mould by the repeated use of the harrow. Two or three bushels of seed are required for each acre of ground, if scattered broadcast. Care is taken to distribute the seed evenly, and the earth is then raked or lightly harrowed over. When flax is raised to be manufactured into cambric and fine lawns, double the quantity of seed is sown in the same space of ground—the plants growing nearer to each other having a greater tendency to shoot up in long slender stalks; and, as the same number of fibres are usually found in each plant, these will be of course finer in proportion.

When the crop grows short and branchy, it is esteemed more valuable for seed than for its fibrous bark, and then it is

* Dr. Roxburgh.

not gathered until the seeds are at full maturity. But if the stalks grow straight and long, then all care of the seed becomes a secondary consideration, and the flax is pulled at the most favourable period for obtaining good fibres. Experience has shown that when the bloom has just fallen, when the stalks begin to turn yellow, and before the leaves fall, the fibres are softer and stronger than if left standing until the seed is quite matured.

It has been found, from experience, that most seeds, though not quite mature when gathered, ripen sufficiently after being plucked, provided they be not detached until dry from the parent plant; all the sap which this contains contributing towards further nourishing and perfecting the seed.

The Dutch avail themselves of this fact with regard to their flax crop.—After pulling the plants they stack them. The seed by this means becomes ripe, while the fibres are collected at the most favourable period of their growth. They thus obtain both of their valuable products from their plants, and supply their less careful neighbours with the seeds.

The water-retting for very fine flax is more carefully performed, and in this process the advantages of running and still water are endeavoured to be combined. The pit into which the water is introduced for this purpose is made three or four months before it is wanted. A pure stream from a soft spring or a small rivulet is always gently running through; the pit having only two small apertures at opposite sides for the ingress and egress of the water. This receptacle should be about five feet deep, narrow, and of a length proportionate to the quantity of flax under process. Poles with hooks attached to them are driven in along the sides, the hooks being rather below the surface of the water; a long pole, the whole length of the pit, is fixed into these hooks. The flax is then made into narrow bundles of about two and a half feet long and four feet high, and these being wrapped in straw, are immersed in the water, where they are kept securely by means of horizontal cross poles, which are then introduced between the long pole and the hooks.

The produce from the flax plant is extremely uncertain in quantity. It is affected by difference of soil and season, as

well as by the degree of carefulness bestowed on its cultivation and preparation; these different circumstances causing a variation of from 280 to 980 lbs. per acre, but the average crop in the same area may be estimated at 560 to 700 lbs. of clean fibres available for spinning and weaving.

The finest thread which has been produced in England by machine-spinning, measures 12,000 yards spun from one pound of flax; though by hand-spinning the process has been carried as high as 36,000 yards to the pound.

From Rees' Cyclopædia.

It has been remarked, in the papers of the Dublin Agricultural Society, that moist stiff soils yield much greater quantities of flax, and far better seed, than can be obtained from light lands; and that the seed secured from the former may, with proper care, be rendered full as good as any that is imported from Riga or Zealand. M. du Hamel, however, thinks that strong land can hardly yield such fine flax as that which grows on lighter grounds. With due pulverization and preparation, there can be no doubt that strong lands will afford excellent crops of good flax. It is seldom that either light sandy or gravelly soils answer well for crops of this kind. Land for flax should neither be in too great a state of fertility, or be too much exhausted, as in the former case the flax is liable to become too luxuriant, and the produce in consequence of a coarser quality; while under the latter circumstances the quantity of produce is very small.

Methods of Sowing.—Where the principal object of the grower is flax, the most general method of putting in the crops is that of sowing them broad-cast over the surface of the land. In performing the business, much care is necessary that the seed be dispersed as evenly as possible over the ground, to prevent the plants rising in an unequal or tufty manner. It should be afterwards covered in by regular harrowing, once or twice in a place, with a light common harrow, not covering it in too deep.

But where the seed constitutes the chief intention of the cultivator, it is contended by some that the drill mode is preferable, as requiring much less seed in sowing, and affording a much better and more abundant produce. Besides, the smoothness and weight of the seed render it extremely proper for being drilled; and the crops can be kept clean with greater facility.

In this method, the distances of the rows or drills should vary according to the circumstances of the soil, and the manner in which the crops are to be kept clean. Where the hand-hoe is to be chiefly depended upon, narrow distances may be proper, as 10 or 12 inches; but where this work is to be principally executed by the horse-hoe or cultivator, larger intervals may be more suitable, as those of eighteen or twenty inches. Slight harrowing and rolling are sometimes afterwards necessary, especially the latter in dry seasons.

It has been observed, that thick-sown flax runs up in height, and produces fine soft flax; but that when sown thin it does not rise to such a height, but spreads out more, sending off a greater number of side branches, which produce a great abundance of seed, which is much better filled, more plump and heavy than that which is produced from thick sown flax-crops. The crops cultivated in this way are not so liable to be beaten down in bad weather, the stems being stronger and better fortified by the more free admission of sun and air amongst them; and they are not so much exposed to danger in weeding or cleaning the rows.

Mr. Donaldson observes, that a crop of flax frequently grows short, and runs out a great number of seed-bearing branches. When that is the case, the seed, not the flax, ought to be the farmer's chief object; and the crop should be allowed to stand till the seeds are in a great measure perfected. But that when the crop thrives, and is likely to become more valuable for the flax than the seeds, it should be pulled soon after the bloom drops off, and before the pods turn hard and sharp in the points. Whenever the seed is the main object, the crops should be perfectly ripened, which is clearly shown by the points of the seed-pods turning hard and sharp, and the capsules beginning to crack. It usually takes place towards the end of July, or beginning of the following month.

It may be further observed, that although it is of much importance, yet it very seldom happens that much attention is bestowed to separate the different sorts of flax from each other, in pulling the crops. In most fields there are varieties of soils; of course, some parts of a field will produce fine flax, others coarse; some long and some short; in a word, crops of different lengths and qualities. It cannot be supposed that all these sorts of flax will undergo an equal degree of watering, grassing, breaking, and heckling, without sustaining great injury. Therefore, when flax of various qualities is promiscuously mixed together in pulling, it is impossible to prevent some part of it from being lost in the after-management; a loss which might be avoided with a small share of attention and some additional trouble when the crop is pulled.

It is certain, in very many cases, that the inattention of flax-farmers to the above very necessary precaution is the cause why crops of flax often turn out of so little value, and is the principal reason why the proportion of tow or inferior flax so often exceeds, in ordinary seasons, that of superior quality.

With regard to *dew retting*, although it is in general the practice, where flax is cultivated in this country, to immerse it in water for some time after it is pulled, yet in Dorsetshire and the neighbourhood it is seldom done. There the flax is allowed to arrive at that state in which the harl parts most easily from the boon or reed, by a more gradual process, that of ripening or producing the necessary putrefaction by the action and influence of the dew, which is nothing more than exposing the flax to the influence of the weather, thinly spread out upon a grass field for a longer period than is necessary, when the operation of watering has been previously performed. When the flax has been so long exposed as to be judged sufficient for effecting the separation of the harl, nothing more is requisite than putting it up in parcels or bundles, in order to its being broken and scutched.

With respect to the produce, there is scarcely any crop that is more variable than that of flax in the quantity and quality. From twenty to seventy stones of fourteen pounds each have been produced from an acre of land; but from forty to fifty stones may be considered a medium crop.

Through the employment of Belgians upon my own premises, I find that but little can be added to the stock of information already afforded. The system is the same, whether in England or in Belgium; improvement being the only distinguishing feature in favour of the foreigner.

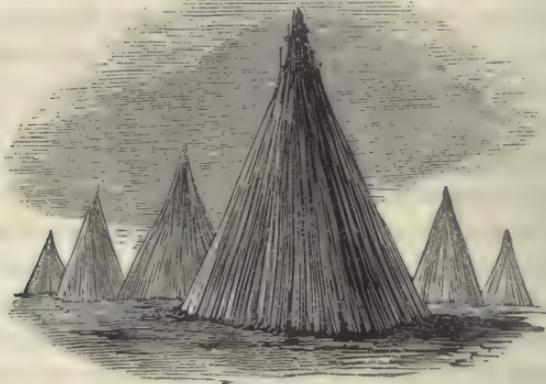
Every process, as I have elsewhere observed, connected with the cultivation, growth, and preparation of flax, is extremely simple, requiring the activity of a practical hand more than the efforts of an ingenious head. As an instance, Sir Charles Burrell, Bart., the earliest and most consistent supporter of my plans, sent a young man to Trimmingham, who, in less than three months, returned to Sussex competent to the management of his master's crops.

The only real difficulty has arisen from the want of suitable steeping accommodation; and, consequently, much flax has been injured both in colour and quantity—a difficulty which the Belgians obviate by sending their flax to places adapted to this particular branch of the business; distance to them being immaterial compared to the advantages derived.

The water of the river Lys, to the extent of many miles along its banks, is the most celebrated depository for flax. Steeping is, to hundreds of men, a regular trade. Two, or more, unite in the possession of a number of crates, adapted to a given expanse of water, for which they pay no rent, and are protected by government from the interference of shipping. The crates are about twelve feet long, eight wide, and three deep. They are simply constructed, and made of common poles. One of my men, Savine Fieuss, was a joint owner of thirty-five. He says that farmers send their flax as far as forty miles by land to be steeped; some, by water, from Holland, even much longer distances. The sheaves, tied with double, and oftener with triple, bands, are placed erect in the crates. The root-ends of one half of a sheaf are tied to the boll-ends of the other, in order to make the bundle even and convenient for stowage in the crate, which, when filled, is floated into deep water, and sunk with stones to about six inches below the surface. After a short time some of the stones are removed to prevent the crate from touching the bottom of the river.

When ready to be removed, the bundles are placed upon

the bank, a few hours, to drain. Afterwards they are untied, and formed into what are called caps, not unlike soldiers' tents. The rapidity with which this operation is performed is perfectly astonishing; for in a few minutes a whole field will assume the appearance of a Lilliputian camp. By this



means the stalks are quickly dried, collected into bundles, and sent home. Where the process of bleaching or grassing is conducted by the owner at his leisure—that is to say, if not convenient to prepare the flax for market immediately,—it is carefully stacked till the following spring, a delay that considerably enhances its value, particularly with respect to colour. On these accounts the system of steeping flax one year and of grassing it the next, is now extensively adopted in those parts; a system that will, I think, be found best suited to the general routine of farm-business in this country.

I had some flax steeped in water, approved by the Belgians, several miles from my own house, according to the above plan; and found in this, as in every other department, the superiority of their practice. I shall, therefore, in future, send my best flax to any distance rather than risk its value at home.

By the rivers and streams that meander through our own country, many places might be found where competent persons could be located, who, at a reasonable charge, would steep the grower's flax upon the Belgian plan, and thus relieve him from the weight of that all-important operation; the after-processes

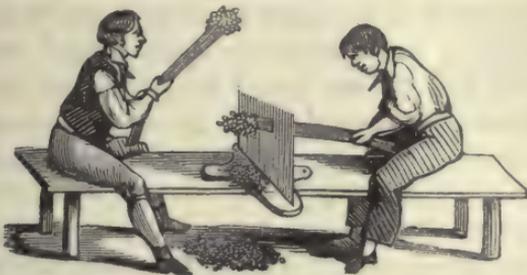
of grassing and scutching being such as the unemployed juvenile population could easily perform at home.

With respect to pulling flax before the seed has arrived at sufficient maturity for preservation, it was in vain that I produced authorities to prove the necessity of sacrificing that important part of the crop in order to secure the finest fibre. The foreigners insisted upon the absurdity of the recommendation, observing, that unless the formation of the seed were completed in the bolls, the flax would be defective: but, if allowed to obtain the proper degree of ripeness, both could, under their treatment, be brought to perfection. I inquired when my flax would be ready for pulling. They replied, "in two weeks." I then directed them to pull some of the ripest and steep it immediately. About a hundred sheaves were accordingly placed in the water; the men declaring that good flax would be found only in the middle, and bad at both ends of the stalks.

At the expiration of a fortnight some more were pulled, and except being stooked and thrashed were treated like the former. But when scutched it was thirty per cent. better, exclusive of the seed saved, both ends being perfect while those of the other were precisely in the state foretold by the Belgians. The remainder of the field was dried in stooks, stacked, and the seed beaten out in the winter.

From the result of this experiment I ascertained that there were four principal methods of pulling and steeping, as follow:—

1. The flax is pulled, and in a few hours steeped with the seed.
2. The bolls are ripped on the field, and the stalks steeped immediately.



3. The flax is dried in stooks, seed thrashed, and stalks steeped.

4. Stoked, stacked, and the seed beetled in the winter months.



The fibre in numbers 1 and 2 will be found equal in value, and both superior to 3 and 4; but taking the seed into account, either of the three latter will be more remunerative than the first, and the last most of all, whether as respects the acreable value of the crop, the advantages of the seed, or the employment afforded where labourers are abundant.

No rational objection can be urged against the growth of flax, because, under the improved system, every argument is in its favour, enforced by reason, humanity, and religion; a system that renders obsolete the clauses in old leases prohibiting the culture of this prolific plant, and the antiquated notion that fibre and seed cannot be secured at the same time.

In the preceding calculations the rent of land, the seed for sowing, and the tillage, are rated much beyond the absolute cost to the farmer who would grow his own seed, employ his own horses, and avoid many of those charges to which the linner or factor is subjected.

Besides, under the improved system of management the most profitable description of flax is that from which the seed

has been saved; therefore the crop is now rendered doubly valuable, and doubly important to the community at large.

With respect to the various details of harvesting and preparing flax for general purposes, those contained in the letters of Messrs. Marshall and Mr. Edmonds deserve particular attention; but where the finest description of flax regardless of seed is the object, Mr. Henderson's directions (p. 96) may be followed with undoubted success. Indeed his plan is so clearly recounted, that it will be found a valuable reference even to those who may not be disposed to sacrifice the seed.

It ought to be remembered that if all aimed at fine fibre the market would be quickly overstocked with that quality, the price be greatly reduced, and the coarser sorts be more in request.

Mr. Beare, of Paston, had more than seven coombs, or 29 bushels, of linseed from an acre of land last year. Mr. Atkinson, of Walcot, had 27 bushels from an acre and 4 rods of ground. The weight of Mr. Pierson's seed of Framlingham was 4 stone 3 lbs. per bushel, and that of Mr. Tillett, of Yaxley, 4 stone 3½ lbs. per bushel. I could adduce many more instances if necessary, but the above are sufficient to prove that the quality, weight, and quantity per acre of English seed surpass any accounts extant.

These facts, added to the discovery that linseed with grain, pulse, or hay can be formed into a compound infinitely cheaper and superior to foreign oil-cake for fattening cattle, incontestably prove that the cultivation of the plant for the sake of the seed must abundantly repay, and that a new agricultural era has commenced, fraught with the most beneficial consequences to landlord, tenant, and labourer.

Suggestions on Fattening Cattle with Native instead of Foreign Produce.

THE Agriculture of the Netherlands is said greatly to excel that of England or of any part of the world. Copious details of those peculiar modes which rendered the husbandry of that country so eminently superior to ours, are published in 'The Royal Agricultural Society's Journal,' in 'The Farmers' Magazine for June, 1840,' and 'Farmers' Series of the Library of Useful Knowledge,' under the head 'Outlines of Flemish Husbandry.' These works were written during a tour made by the authors through East and West Flanders; and as reference is given to particular farms, their accuracy cannot be doubted. I venture strongly to recommend an attentive perusal of those excellent accounts, being persuaded that they will tend materially to advance the objects of the following pages.

It is far from my intention to draw any invidious comparison between the farmers of the Netherlands and those of my own country; on the contrary, from all I can discover, the Flemish farmer is much beneath the British agriculturist in the possession of capital, station, education, and general knowledge. Our advantages consist in machinery, in the breed of our horses, in cattle, and in sheep. "But," says the author of the *Outlines of Flemish Husbandry*, "in the minute attention to the qualities of the soil, in the management of manures of different kinds, in the judicious succession of crops, and especially in the economy of land, we have still to learn something of the Flemings."

The climate is described as differing very little from that of England; but the winters are more severe, and snow covers the ground longer; consequently tillage and sowing cannot be performed till a late period of the spring. The greater portion of the soil is far from being naturally productive; much of it is of a poor sandy description. It is compared to the sandy soil of Norfolk and Lincolnshire; but by indefatigable industry is rendered extremely fertile. Of all their crops flax is the most profitable. It fetches from 20*l.* to 25*l.*, and even

to 30*l.* per acre in the best cultivated districts, independent of the seed, which is worth 5*l.* or 6*l.* more. In other parts the crop is of much less value, being rated at 12*l.* per acre only. French and Brabant merchants deal extensively with the Flemings for flax: they purchase it as soon as the seed is thrashed, and prepare it for exportation at their own expense; so that the profit of an acre of flax to Flemish farmers must be considerable, and may well be termed their "golden crop."

The offal was once highly appreciated in this country as linseed-cake for fattening cattle; but, in consequence of the demand becoming greater than the supply, a spurious description of cake was palmed upon the agriculturists, who now, perceiving the imposition, hold it in less estimation.

A society for the improvement of the growth and preparation of flax has recently been formed at Belfast, in Ireland, which promises to be of great benefit. The origin of this Society is somewhat remarkable. The Belgian government having it in contemplation to impose an increased duty upon the export of flax, sent a deputation, consisting of a member of the Belgian Senate, two members of the Chamber of Representatives, a banker, and an intelligent merchant, to inspect the establishments of the leading manufactories of England, Scotland, and Ireland. They were surprised at the specimens of flax submitted to their inspection, which they considered our inferior mode of culture incapable of producing. Hence they discovered that we only required the Belgian care in preparing the land to render us independent of any other country for flax of the finest description. The Commissioners returned, delivered their report, and nothing more was heard of the proposed duty. The Irish, however, formed the above-mentioned Association, followed the example of their foreign visitors, and despatched a deputation to the Belgians to inquire into their superior mode of cultivation, to engage experienced workmen to settle in Ireland and instruct them in their art.

The climate of this country is less humid than that of Ireland. And, if we look at our vast and varied resources, at the immense importations of flax by our manufacturers, of linseed-oil by our merchants, and of oil-cake by our

farmers, I cannot doubt that if a society were formed in England upon the same principles which instigated the formation of the Society in Ireland, it would tend materially to advance the best interests of agriculture.

Nothing can more clearly evince the fattening properties of linseed than the striking effects produced by the offal, which is formed into cake when the oil is extracted. Repeated and extensive experiments have been made to fatten cattle with the seed itself, also with the oil. But on account of the inconvenience, trouble, and expense of preparing the food, with the uncertainty of a profitable return, the use both of seed and oil is nearly discontinued, and the prevailing opinion now is that the offal is superior to the pure seed. For "there is nothing like cake!" exclaim many writers on the subject, and many farmers. Indeed, the prejudices of some were carried so far at one time as to pronounce the oil pernicious, and to recommend an article called double-pressed cake at an extra cost of two pounds per ton, instead of the cake commonly used; but I believe the merit of this discovery does not belong to Norfolk. A little reflection would have shown how improbable it was that the seed-crusher would be so regardless of his own interests as to leave oil, worth from 35*l.* to 40*l.* per ton in the cake, which he only sold for 10*l.*

That linseed-oil will fatten bullocks experience has placed beyond a doubt. Amongst the fattest beasts ever sent to the London market from Norfolk, was a lot of Scotch heifers, grazed entirely on linseed-oil and hay; but the quantity given per day, the cost per head, or any thing relative to profit or loss, I never heard: farmers seldom keep account of such matters; hence the frequent failure of experiments. A bullock may be allowed in general to eat as much cake in a day as he pleases; but a nice regard must always be had to the quantity of linseed placed before him, and especially to the oil. Neither oil nor linseed should be used in a crude state, but formed into mucilage by being boiled in water. The seed must be first reduced to fine meal; one pound and a half of which, stirred into twelve pounds of water while it is boiling, with four pounds and a half of barley, beans, or pea-meal, and given to a bullock of between 40 and 50 stone every day,

will, in addition to Swedish turnips, be quite sufficient, or perhaps rather more than he would be inclined to eat. This small quantity of linseed will act well on the stomach, and the bullocks will thrive and fatten in a degree that can scarcely be credited, except by the person who tries the experiment. In no instance has it failed. The quantity of seed may be increased after the animal has been accustomed to it for some time, but I believe to no great extent. I have reduced this to a certainty from repeated tests: therefore, as oil is stored so abundantly in linseed, I think I may fairly attribute the failure of those who have so freely condemned the use of both oil and seed to a want of proper inquiry into, and a prudent and systematic employment of, their extraordinary fattening properties.

It is but just to state that the above investigation originated in the formation of one of those useful and patriotic institutions, called "Farmers' Clubs," at North Walsham, in the autumn of 1840. The club meets once in each month. The desirableness of fattening cattle on home-made food rather than on foreign produce, was a subject brought forward at one of those meetings. I therefore had coppers erected, and commenced a series of experiments by incorporating linseed with corn or pulse, which ended in the production of the desired substitute for foreign oil-cake.

The last of my experimental bullocks for 1841 was disposed of at Christmas, at 8*s.* 6*d.* per stone. He weighed 60 stone 5 lbs., at 14 lbs. to the stone; cost 7*l.* 17*s.* 6*d.* thirteen months previously: so that he paid 17*l.* 10*s.* for little more than one year's keeping. His common food was turnips or grass: 14 lbs. a-day of barley or peas compound were given him for forty-eight weeks, and an unlimited quantity the last five weeks; when, considering the shortness of that time, his progress was perfectly astonishing—not only to myself, a constant observer, but to many graziers and butchers who had had occasional opportunities of examining him. Altogether the weight of compound consumed did not exceed two tons four hundred weight, at the cost of only 3*l.* 16*s.* per ton.

From the above period the same practice has been continued upon my farm, both in summer and in winter, with never-fail-

ing success. Some additions, and, perhaps, improvements, have been made, as the inquirer will find by referring to the index ; but the original principle has remained unaltered. Instead, however, of twelve, my cattle have been regularly sent to market every six months, obtaining profits such as prove the superiority of the system over every other. Of this fact indisputable evidence is given in my last public letter that appeared in the 'Norfolk Chronicle' on the 20th of February, 1846, a letter that may be regarded as the compendium of my labours, and which now occupies an appropriate place in this volume. (See page 46.)

Directions for making Compound for Sheep.

Let a quantity of linseed be reduced to a fine meal, and barley to the thickness of a wafer, by a crushing-machine with smooth cylinders (*see Engraving*). Put 168 lbs. of water into an iron copper, and as soon as it boils, not before, stir in 21 lbs. of linseed meal ; continue to stir it for about five minutes, then let 63 lbs. of the crushed barley be sprinkled by the hand of one person upon the boiling mucilage, while another rapidly stirs and crams it in. After the whole has been carefully incorporated, which will not occupy more than five or ten minutes, cover it down and throw the furnace-door open. Should there be much fire, put it out. The mass will continue to simmer, from the heat of the cauldron, till the barley has absorbed the mucilage ; when the kernels will have resumed nearly their original shape, and may justly be compared to little oil-cakes, which, when cold, will be devoured with avidity.

For Bullocks,

the same process is to be observed ; but the barley must be ground to the finest meal by mill stones, and the quantity of water reduced to about 150 lbs. There is this difference also : in the former case the fire need not be extinguished, but in the latter it must, or at least be damped. The reason is obvious : for flattened barley requires heat to carry on absorption ; while meal is sufficiently cooked by immersion.

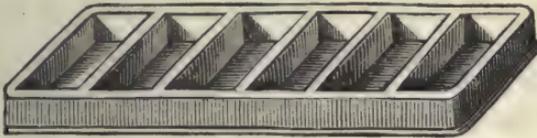
It may be asked, why should not the compound for sheep

be equally adapted to bullocks? I answer, that sheep are close-ruminating animals, and pass nothing undigested; while with bullocks it is far otherwise. This the practical observer will soon discover. Nor let the amateur disdain the inquiry; because his success as a farmer mainly depends upon the fattening of cattle. He must now think and act for himself, and no longer be guided by antiquated maxims and customs founded upon idleness, ignorance, and prejudice.

I repeat, therefore, that it is not necessary for barley, or even linseed, to be reduced to fine meal for sheep; but for bullocks it is indispensable that linseed should be crushed, and barley ground as fine as possible.

On the compound being removed into tubs, it must be rammed down to exclude the air, and to prevent it from turning rancid. After a little practice the eye will be a sufficient guide to the proportions, without the trouble of weighing. The compound will keep a long time if properly prepared. The consistency ought to be like clay when made into bricks.

Indeed, many farmers in the neighbourhood of North Walsham put the compound while hot into shapes, like brick-moulds. The frame is about 28 inches long, and 10 wide; it



has neither top nor bottom; and when used is placed on a piece of board rather longer and wider than the frame. The compound is firmly pressed into the moulds with a gardener's trowel, and on the frame being lifted up will be formed into cakes. Another board is then placed under the frame as before; and so on till the copper is empty. When cold, the cakes may be cut into pieces like bread, and given to the cattle. It will be seen that many boards are required, and a convenient place for stowing the cakes. I have tried this plan myself, but found it troublesome, expensive, and unnecessary. Observe, the inside of the moulds should be made rather larger

at the bottom than at the top, in order to prevent the compound from sticking when the frame is lifted up.

In the spring and summer months, germinated barley might be made into compound with great advantage. Bullocks will eat it with avidity, and thrive fast upon it. The process is simple. Let some barley be steeped about two days, and the water drained off. After the radical or root has grown to nearly a quarter of an inch in length, it must be well bruised with the crushing-machine, and as much as possible forced into some boiling mucilage, containing the same quantity of linseed, but a fourth less of water than would have been prepared for dry barley. It will soon turn sour, but the cattle will not refuse it on that account. Care must be taken lest the sprouts are suffered to grow beyond the prescribed length, or the quality will be materially injured; therefore it will be necessary to destroy their growth by passing the barley through the crusher. It may be then used at pleasure.

The foregoing remarks equally apply to other grain and pulse, in forming which into compounds the same rules must be adhered to; but peas and beans require more water than either barley or oats. The proper proportions will easily be ascertained by practice. An admixture of grain and pulse with linseed will be found to act well together.

Pigs in a yard fatten upon the excrement of bullocks fed with oil-cake; but if the cake be reduced to a pulp, and incorporated with other materials, according to the receipts for making compounds, the cattle would derive the intended benefit instead of the pigs. This remark is equally applicable to corn not properly ground. I am thus minute in order to convey with clearness my opinion of the necessity for reducing linseed, grain, and pulse to fine meal.

Either potatoes, carrots, turnips, or mangold wurzel boiled and incorporated with linseed meal, form a compound upon which cattle fatten with great rapidity. To make it, nothing more is required than to fill the copper with washed potatoes, or carrots, &c., sliced. Supposing the copper would contain eight or nine pails of water, let only one be added. In a few minutes the water will boil, and the steam will speedily cook the roots; then a convenient portion should be put into a stout-

bottomed trough, with a little linseed meal, and mashed with the rammer, while a boy turns it over. The remainder must be prepared in the same way. As the mass increases in the tub it should be pressed firmly down, in order that it may retain the heat as long as possible. The length and size of the rammer ought to be adapted to the height and strength of the person employed.



It will be found convenient to have two or three at hand, varying from eighteen inches to two feet long, tapering, and from four to six inches square at the bottom. A pin should be passed through the top for the convenience of being worked with both hands.

Nor let these compounds be despised on account of their simplicity. They are neat and convenient modes of placing artificial food before bullocks, which must be superior to cake made of all sorts of foreign rubbish.* To assert that such offal is really superior to the sound and wholesome materials of which the compounds are formed, is like asserting that bran is superior to wheat. Sixteen coombs of linseed are required to make one ton of cake. Now, if the number of tons imported into this country alone were mul-

* "The crop of linseed was considered very good in 1842, but I must confess it was like the corn-crop, bad at the best, for I walked into many acre and half-acre patches (for that is the usual extent sown together), not more than from eighteen inches to two feet in length, and I found it by no means heavily seeded; but during my stay of but a few days at Riga, I was equally astonished to see the number of crafts which arrived laden with that article, and as quickly cleared off by English, Scotch, and other vessels, many of which had been waiting several weeks for the arrival, and some after all obliged to return with only half a cargo.

"Large orders for linseed had arrived from France in consequence of the failure of the hay-crop; there was a difficulty of supply. Upon inquiry I found that linseed was gathered by Polish Jews, about three or four hundred men and women, who had been many months collecting it through the interior of the country. As soon as the boats were unladen the crafts would be broken up and sold for fire-wood, after which the Jews would start off again upon another expedition. At Riga, the linseed and other seeds arrive in such a bad state, from the adulteration of the Jew merchants, that the whole is obliged to be re-dressed for the English market. This accounts for the mixed state of the foreign cake. The corn is collected in the same way."—*Extract from the published Notes of Mr. Salter taken during a Tour through Russia, &c.*

tiplied by sixteen, I question whether it would not amount to infinitely more than is grown on the whole continent of Europe. We, however, receive the supply; but of what does that supply consist? The seeds of hemp, and of many other plants which are grown solely for the purpose, besides the seeds of many wild plants that infest the fields, are crushed to obtain the oil. The stones of fruit, nuts of forest-trees, and ground-nuts,* yield an abundance of oil, which, in the form of cake, are largely exported from various quarters. And whither are they sent if not to England, the great mart of the world? Let a cake be taken from every cargo that reaches our ports during a given period and examined, and I expect that scarcely two will be found alike. Now, if they were all made of linseed, they would of course, in some measure, correspond. But I much doubt whether even the presence of linseed could be discovered at all in some of them. Samples of cake have been sent to me for examination, and I have seen some tested in which the refuse of linseed was not perceptible, but enough of filthy sediment instead, at the bottom of the vessels. A few months since I paid a visit to one of the first corn-markets in this county, with the view of obtaining information respecting the quantity of oil-cake consumed in that neighbourhood. I was astonished at the enormous amount, which was calculated to exceed the absolute rental of the land. Some of the leading agriculturists assured me that their own consumption exceeded fifty tons each a-year; that numbers consumed much more, even from one to two hundred tons. While conversing upon this subject, I was politely challenged by a merchant to inspect a sample of oil-cake which he had brought that day for sale, and to detect, if I could, anything besides linseed. "For," said he, "the maker with whom I deal has all his linseed sifted, so that no other ingredient may be incorporated with it." He placed in my hands, in the presence of a third person, one of the best prepared cakes that I had ever seen; but on breaking it, innumerable seeds of the *sinapis*

* The ground-nut is becoming also a valuable article of commerce, and this, with other nuts mentioned, yields a rich supply of oil and oil-cake for the use of cattle. (Sir Fowell Buxton's 'Slave Trade and Remedy,' page 322.) Large quantities are also made in India.

order were easily distinguished; he frankly acknowledged his mistake. Nor do I attribute to our merchants in general any intention of palming upon the public a spurious article. The foreigners are the impostors; the English the dupes. But will British agriculturists any longer expend their millions with foreigners? Already the effects of the tariff and of the corn-law are felt in the reduction of the price of meat and of barley. Now every farmer who fattens his cattle with foreign cake, indirectly becomes himself an importer, and contributes directly to reduce the price of those articles; for all the meat raised from the use of cake might have been produced from his own corn, the supply at market lessened, and a consequent higher price obtained for that sold. Hence we may reasonably account for the low price of barley, the high price of oil-cake, and the unprofitable returns for grazing. The reason assigned for the low price of barley was an immense supply beyond the demand. A precisely opposite reason was assigned for the high price of oil-cake, for the demand exceeded the supply. At one time the farmer had, I believe, to accept from 10*l.* to 12*l.* per last for his barley, and to pay from 10*l.* to 12*l.* per ton for cake. Therefore the cost of a ton of cake was the price of twenty coombs of barley; and we are entitled to assume that, for every ton of cake consumed, twenty coombs of barley were forced upon the market, which would have afforded upon the principle I have laid down six tons and a half of compound. To form some idea of the gross amount of barley that might have been consumed instead of cake, we have merely to suppose that fifty thousand tons were imported; now, as twenty coombs of barley were only equal to one ton of cake, fifty thousand tons of cake were equal to twenty times fifty thousand, or one million coombs of barley; therefore, as twenty coombs of barley will make six tons and a half of compound, a million would have afforded three hundred and twenty-five thousand tons, all of which I calculate would have been a clear saving, and returned to the pocket in the sale of meat; because if one-sixth of the barley sent to market last year had been withheld and made into compound, the probability is that, consequent on a short supply, the price would have advanced 3*s.* per coomb, and the remaining five parts realised something more than the whole six—that is to say, as sixty

coombs of barley, at 12s. per coomb, would amount to 36*l.*, fifty coombs at 15s. would obtain 37*l.* 10s.; consequently ten coombs in every sixty have been worse than thrown away, for the money was given to the encouragement of foreign agriculture, and to the employment of foreign labourers, while English labourers, for the want of work, were compelled to seek an asylum in Union-houses, where they were maintained in idleness.

Scarcely a guinea of those immense sums paid by the farmers of this to the farmers of a foreign country for oil-cake meets an adequate return. Thousands of bullocks are often sold in Smithfield which do not pay the wages for tending, and some not even the drover's expenses. The best returns seldom leave anything for cake; and so long as foreign produce is substituted for our own to fatten cattle, the effect will be similar. Besides, the demand for barley, from many causes, decreases every year; and as the ports are open at a less rate of duty, the surplus must be infinitely greater. Surely, then, it must be incumbent on the agriculturists of this country to alter their system, and obtain a supply of artificial food from the resources of their own soil. In proportion as the cultivation of barley could be curtailed, the supply must necessarily be diminished, and the command of price placed more in the grower's power. The money value to him of the less supply would, as I have attempted to show, be equal to that of the larger. To prevent so great an excess in future, the appropriation of one acre in seven of all lands that were intended to be sown with barley to the growth of linseed, peas, and beans, would reduce the supply to the extent I have mentioned; have precisely the same effect on the price of barley; be extremely beneficial to the soil in the rotation of crops; and afford some millions of tons of nutritious food, upon which cattle and sheep will thrive beyond the belief of those who have never tried the experiment, returning at the same time as rich and lasting a description of manure as can possibly be obtained from any other source.

Connected with our present system of farming is an immense annual outlay for foreign manures, and in which doubtless as many impositions are practised as with cake. I believe if the Belgian mode of making manure were practised in this country,

we should be rendered perfectly independent of foreign aid. The Flemish farmers say, "that without manure there is no corn; without cattle there is no manure; without green crops and roots cattle cannot be kept; and he who can make manure at the least cost is the best farmer."

I have long exemplified the beneficial results of house-feeding cattle on green crops, and now all my bullocks are provided with a separate box.

I do not speak of turnips, because the management of that crop is too well known to require any observations from me. But with respect to the economy of carrying grass from the field and giving it to bullocks in houses, cut short with an engine (Dyball's), perhaps a few remarks may not be superfluous. The greatest care should be paid to the economical use of straw in winter, so that a proper supply may be at hand for summer-grazing. One half of the straw generally consumed in farm-yards might by care and attention be reserved for this purpose. First, by properly stacking and thatching it; secondly, by placing troughs* upon the buildings to conduct the rain-water from the yards; and, thirdly, by keeping cattle longer in the fields in winter. There is no question as to the benefit derived from consuming turnips on the land in winter, but considerable doubts are entertained respecting feeding off grass in summer. I have heard it repeatedly asserted that better wheat is grown where grass has been mowed for hay than where it has been fed down. This has been frequently proved in fields divided by hurdles, one part fed, the other mowed, but both treated alike for wheat. Admitting that the land obtains no perceptible benefit by feeding off the grass in summer, how strongly does it argue in favour of feeding cattle in boxes, if only for the sake of the manure! But the advantage is greatly augmented when we consider that one acre will house-feed three bullocks; whereas it will require three acres to graze them in the field. Taking the value of the manure into consideration, the superiority of box-feeding is incalculably great.

* Cast-iron troughs are sold at 6*d.* per foot, the cost of which would be amply repaid the first year; and they could remain as farm-covenants if put up by the tenant.

A piece of lucern, in proportion to the size of every farm, ought to be grown, and a few acres of early potatoes planted. These will always afford a supply, should the grass at any time fail, and they will be found convenient as a change of food. If not wanted, the potatoes of course will remain as winter store. To this system let the use of compound be added, and the farmer will be rendered comparatively independent of turnips, which, at best, is an expensive and precarious crop.

Great disappointment is often experienced in the use of oil-cake. Bullocks will refuse to eat it, if previously fed with some of a better quality; and it is but reasonable to suppose that their progress must be greatly retarded by a change for the worse. But no such inconveniences adhere to the use of compound, for the

Degrees of Fattening

may be regulated in strict accordance with the convenience and intention of the farmer, by mixing up a small quantity of linseed at first, and increasing it at pleasure. Upon this principle the condition of cattle may be advanced or retarded as circumstances require; and the grazier who has a store of linseed at command will be protected from loss under any emergency, either from the want of grass, through the heat and drought of summer, or turnips, through the frosts of winter. Also, in every case where milk is required, linseed will be found a powerful auxiliary, whether for calves, for lambs, or for pigs.* Adequately to portray its value to the fold, the dairy and the stable would require an additional volume, so diversified are its properties, and so easy their application; as the subjoined letter, published in December last, will in some degree elucidate.

* Observe, linseed compounds are not adapted to the fattening of pigs. A correspondent informed me that he tried the experiment, and that the pork was unsaleable.

ON THE USE OF LINSEED.

To the Editor of ———.

SIR,

THE season has arrived when any suggestions on economical methods of feeding cattle must be received with interest.

Hitherto I have afforded information with reference more to fat than to lean stock, and am daily gratified by accounts of the advantages derived. But were my correspondents to offer the result of their experience through the public papers, they would aid my labours, confer inestimable benefits upon the agricultural community, and promote the cause of philanthropy. For it is only by corroborative evidence that we can expect to remove prejudice, induce farmers to adopt new systems, and confer upon the population the blessings of increased production.

In Norfolk generally, and in many parts of other counties, the use of linseed to fatten bullocks and sheep is beginning to be understood. Many suppose that they are sufficiently acquainted with its properties; but we have yet much to learn as to the extent of its value, particularly for rearing store stock in combination with box-feeding and summer-grazing. The direct advantage is seen in the rapid progress of the cattle; the indirect, in the superiority of the crops where the manure thus obtained has been applied. Formerly, through ignorance of management, linseed, as cattle-food, failed to remunerate, and consequently its use had long been discontinued in this county. But, during the last four years, the demand has been greater than the supply—an incontestable proof of the efficacy of linseed compounds.

Many farm premises have been metamorphosed through the conversion of sheds into boxes, and the addition of new ones; not by amateur farmers alone, who are too often influenced by

plausible theories, but by men of long experience and sound judgment. I subjoin, with much satisfaction, an extract from a letter inserted in the 'Sussex Herald,' by Sir Charles Burrell, Bart., with a plan of whose boxes, and boiling-house, &c., attached; and those of many other landowners and tenant-farmers, I purpose to embody in my forthcoming work.

"I cannot lose the opportunity of repeating my entire satisfaction derived from Mr. Warnes's box-feeding system as set forth in his pamphlets, and brought into both summer and winter practice on my farm, the beasts thriving rapidly on the compound mode of crushed linseed, with bean, barley, or other meal, boiled and formed into a mass; with which my beasts have thriven more advantageously than others on oil-cake, and at less cost; and, as regards the excellence and flavour of the meat, it is superior, and specially tender and juicy. And if further proof were desirable, it is afforded in their ready sale to the neighbouring butchers, and in the intended increase, early in the spring, of the number of my cattle-boxes, from the roofs of which the rain-water will be saved in one or more spacious tanks arched over, similar to one which wholly supplies my hot and green houses. With respect to particular statements of comparative cost in feeding on Mr. Warnes's system, it seems to me prudent to state no corrected calculations until I have completed two years' trial. Suffice it now, however, to add that I have sound grounds for preferring the box-feeding system to every other mode; the food being cheaper, the cattle thriving faster, and the dung made being so much better, that we consider 12 loads thereof equal to 20 loads from oil-cake-fed beasts, whether tied up or otherwise. Moreover, the very recent date of your letter precludes the making accurate calculations; but I hope that what I have stated will be plain and satisfactory.

"CHARLES MERRICK BURRELL."

The first range of boxes to which Sir Charles refers, were originally commodious pig-sties.

W. W. Whitmore, Esq., of Dudmanston, Shropshire, is engaged, at the present time, in transforming a barn into a

double, and some adjoining bullock sheds into a single, row of boxes, with lofts for provender; all which, communicating with the cooking-house, originally a dairy, form a complete establishment, and at a cost comparatively nominal. This gentleman's plan embraces 40 boxes, capable of containing 50 or 60 bullocks.

The Rev. J. C. Blair Warren, of Horkesley Hall, has about 50 boxes, on various parts of his premises, arranged and constructed upon principles alike economical. But the most compact establishment that I have yet had the pleasure of inspecting is that of H. S. Partridge, Esq., of Hockham Hall, comprising, under one roof, accommodation for 14 bullocks; a boiling-house, with coppers and a pump; a turnip-house, and chambers for hay; and cutting and linseed-crushing machines.

I mention these circumstances to show that all farm premises may, by a little consideration and contrivance, be similarly converted, and every farmer in the kingdom be stimulated to adopt a system that will ensure profit to himself, rent to his landlord, and employment to his labourers; because it would enable him to double his usual number of cattle, to make two returns of fat bullocks in a year, and to apply to his land an abundance of efficacious manure: a system based upon fundamental principles, depending upon its own resources, requiring neither foreign food, foreign manures, nor chemical preparations: a system simple in practice, powerful in effect, and applicable to every grade of farmer: a system more important, if possible, to the breeder than to the grazier, if we may judge from the remarks of the Duke of Buccleuch, at a meeting of the Dumfries Agricultural Association; and from the miserable spectacles that appear in our cattle-markets—spectacles at variance both with humanity and judicious management. His Grace animadverted upon the deteriorating effect of keeping cattle upon straw in winter, and advised the adoption of some method that would, at least, retain the condition acquired in the summer, and improve the manure. Linseed-meal boiled for a few minutes, and intimately incorporated with straw, will achieve both objects. For instance, Mr. Partridge has 21 score of ewes, to which a peck only is given per day, at the

cost of 1s. 9d., or a penny per score, including the expense of crushing, boiling, &c.

That so small a quantity of linseed should be divided amongst 420 sheep, must, of course, appear paradoxical; but the following explanation will remove doubt.

A peck of linseed reduced to fine meal is stirred into twenty gallons of water; in about ten minutes, the mucilage being formed, a pail-full is poured, by one person, upon two bushels of cut hay thrown into a strong trough, while another mixes it with a fork, and hastens the absorption with a small rammer. The like quantity of chaff is next added with the mucilage as before, till the copper is empty. The mass being firmly pressed down, is, after a short time, carried in sacks to the fold, where I had the pleasure of witnessing the avidity with which sheep devour hay, before so ordinary that they refused to eat. As the lambing season advances, and circumstances require, the proportion of linseed will be increased—a method that all, who are straitened for provender, will find it their interest to adopt; remembering that this mixture is alike serviceable to lean cattle and to horses, and that the straw of peas and the stalks of beans are second only to hay. A few Swede turnips, mangold wurzel, or carrots, sliced very small, and added to the water when first put into the copper, will much improve the compound.

In offering, or rather in repeating, the above hints, I disclaim every consideration but that of assisting my countrymen in these perplexing and alarming times. Under happier circumstances, it would be the duty of every occupier of the soil to ascertain the extent of his own resources. But at the present crisis, the investigation is rendered imperative in a ten-fold degree. The farmer must remember, that other interests are involved besides his own, and that he must no longer turn a deaf ear to the calls for improvement on account of imaginary trouble. For although a Protectionist myself, I am confident that a free trade in corn, with its consequent evils, can only be averted by “increased protection.”

JOHN WARNES, JUN.

Trimingham, Dec. 18th, 1845.

P.S.—W. H. Windham, Esq., of Felbrig Hall, has about 40 boxes upon his Park Farm, and, with Lord Wodehouse, Sir Edward Stracey, Bart., and other landlords in Norfolk, has commenced the erection of boxes for their tenants, according to the annexed plans.

Calves might, upon the compound system of feeding in boxes, be made to weigh 30 or 40 stone each (of 14 lbs.) at a year old. Two returns of fat cattle in a year may be effected. But success will in a great measure depend upon particularity of feeding and cleanliness. A bullock ought never to be long without food, and a clean lock of straw to rest upon; for when he ceases to eat he will lie down and ruminate, seldom rising except to eat again. Let those who wish to try the experiment place their bullocks in boxes on the first of January, and return them at the end of June, when they will have consumed the last of the turnips, which are the worst, and the first of the grass, which is the best; then replace them with the others, which will consume the last of the grass, which is the worst, and the first of the turnips, which are the best, allowing them a liberal and equal proportion of compound.

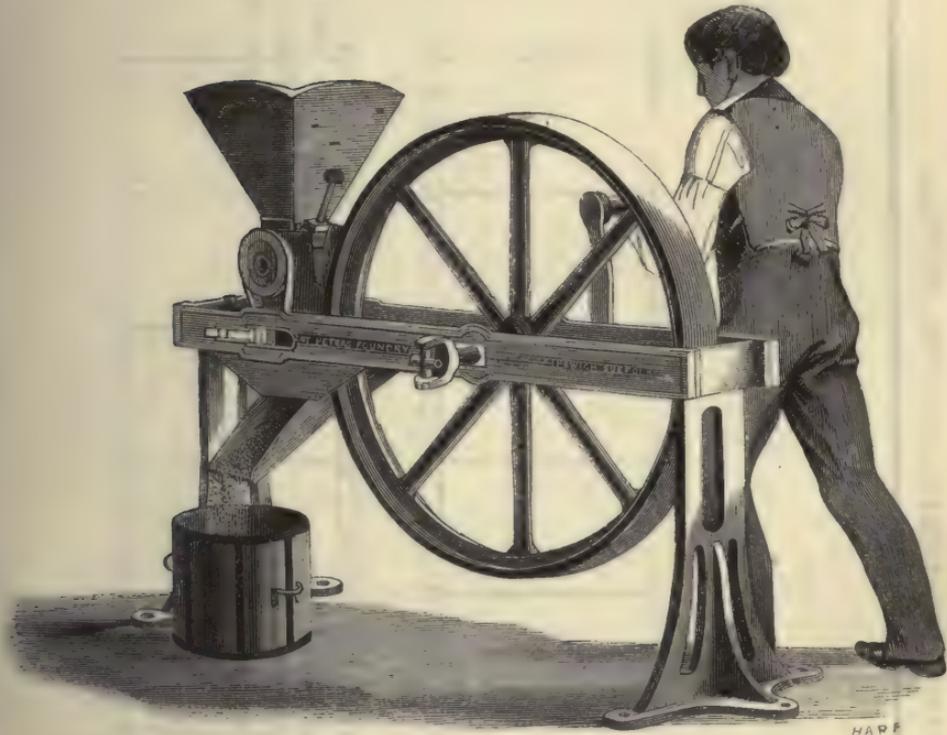
It will easily be seen that the advantage of a quick return consists in selling the same weight of bones with a less proportion of meat than if kept a longer period to obtain a greater increase. For, keeping the same price of meat in view, suppose an ox is sent, after having been grazed six months, to market, and you are offered 2*l.* for him, at 7*s.* per stone, which you refuse, and keep him six months longer; you then sell him at 7*s.* per stone; the increased weight during the latter time will chiefly consist of meat, and the return for food will be much less than for the former six months.

To make the case more clear. I expect that an ox purchased at ten guineas, would at the end of six months weigh 60 stone, of 14 lbs. to the stone, which, if sold at 7*s.* per stone, would amount to 2*l.*, and repay for his keeping 10 guineas; but if retained six months longer, his weight would not exceed 80 stone, which would only amount to 28*l.*, leaving a balance in favour of the quick return of 3*l.* 10*s.*

In the following series of letters I have endeavoured in

some measure to afford information alike advantageous to all who have stock to maintain. In their perusal the reader will perceive that it is not by the profuse, but by the economical, use of linseed that its real value can be ascertained, and that time and experience alone are required to develop the immeasurable advantages to the British nation of the flax crop.

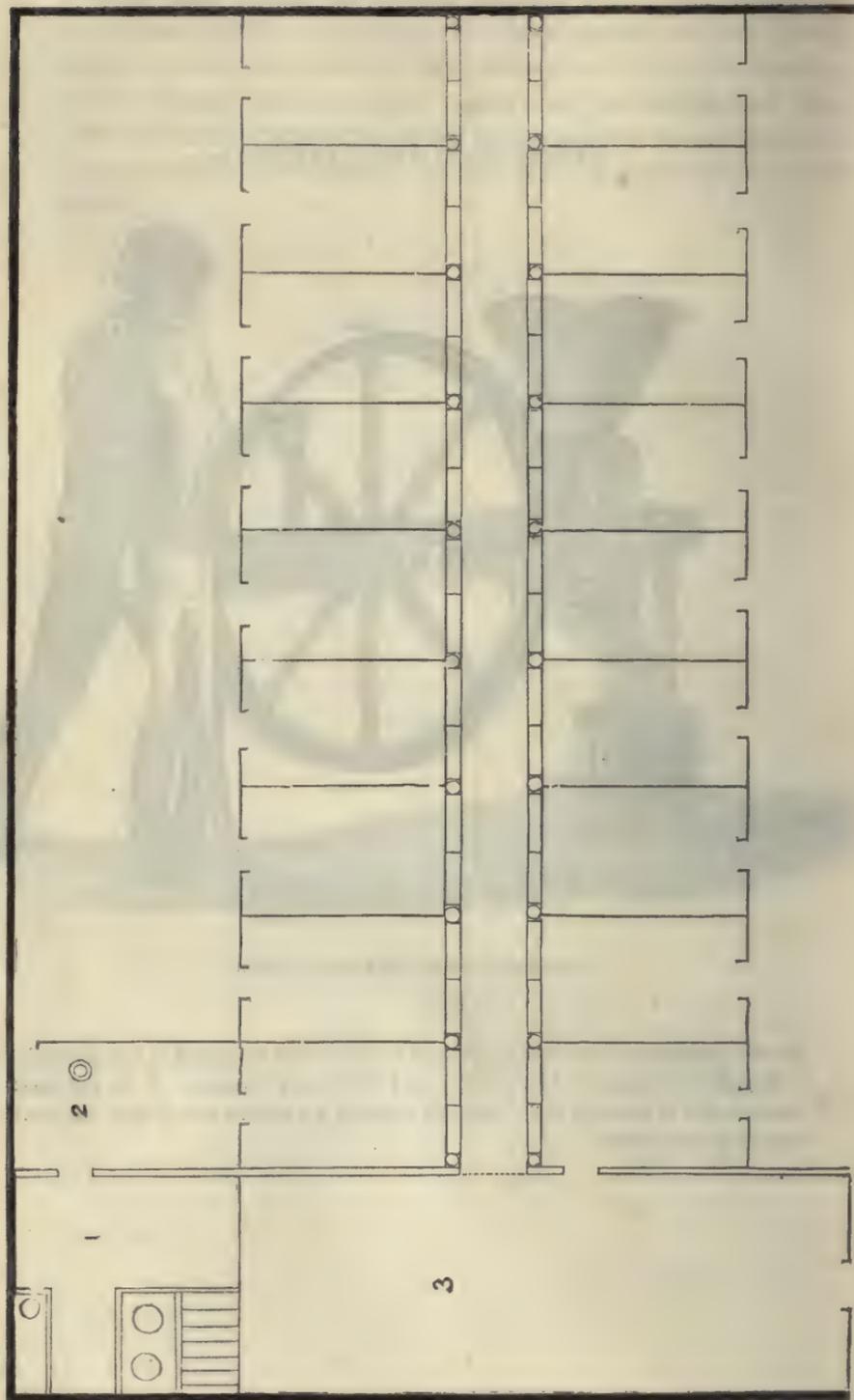
MESSRS. BOND AND HARWOOD'S



LINSEED-CRUSHER, IPSWICH, SUFFOLK.

As the reducing of linseed into *fine meal* for the cattle compound is indispensable, I strongly recommend Messrs. Bond and Harwood's Crusher. It is the most effective, and, at the same time, most easy machine for manual labour that has come under my observation.

THE BOXES OF MR. CUBITT, OF WITTON, NORFOLK.

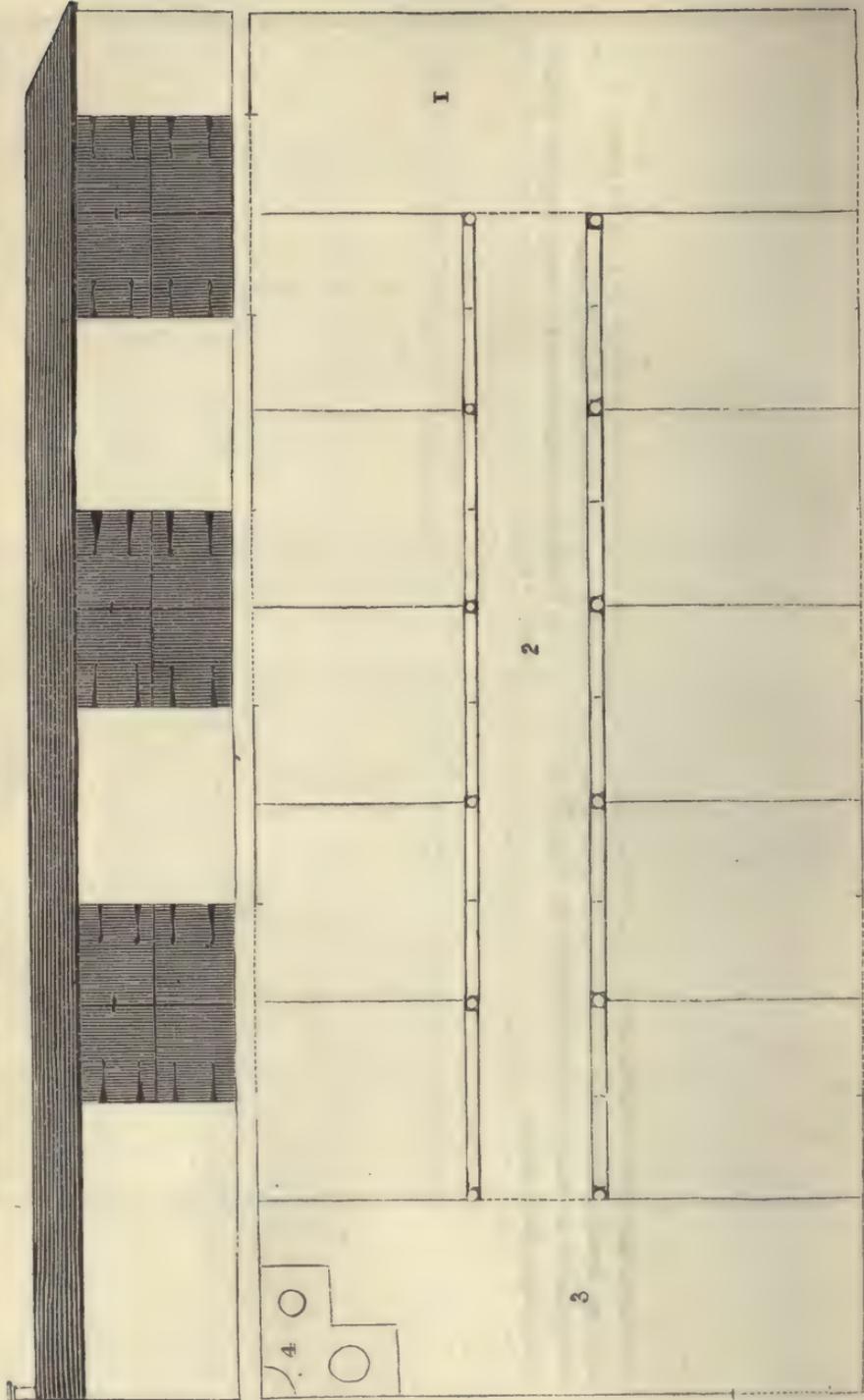


The boxes of Mr. Cubitt of Witton, Norfolk, tenant to Lord Woodhouse, are situated between a barn and some old domestic offices, now applied to the cooking department, comprising altogether a well arranged establishment.

Each box contains about 80 square feet; and the general construction resembles that of the foregoing plans.

Mr. Cubitt is a flax-grower and a steady supporter of the cause.

CATTLE-BOXES OF SIR EDWARD STRACY, BART., RACKHEATH, NEAR NORWICH.



The annexed plate represents the ground-plan and elevation of 10 boxes, with cooking and turnip houses, upon an Estate belonging to Sir Edward Stracy, Bart., Rackheath, near Norwich, in the occupation of Mr. Brown.

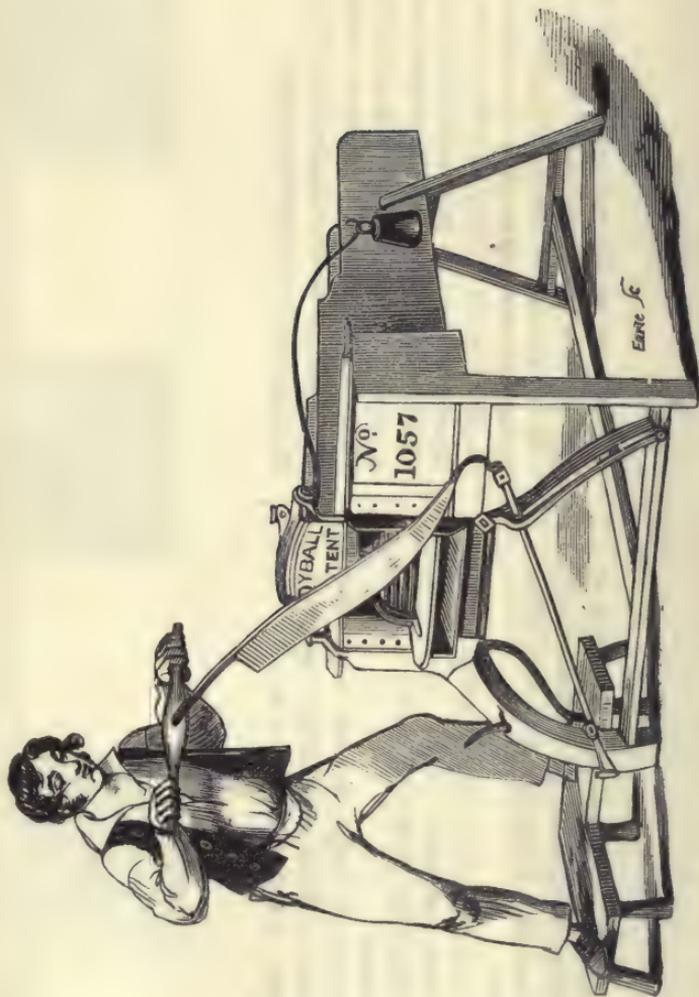
- No. 1. Turnip-house, 24 feet long and 8 wide.
2. Passage, 4 feet wide.
3. Boiling-house, 24 feet long, 8 wide.
4. Coppers.

Each box is 10 feet long and 8 wide; the whole range within the building being 56 by 24. Height of the wall from the ground outside to the cill, 6 feet. Length of the spars, 15 feet.

These boxes are also sunk about 20 inches into the ground. The cribs move up and down between the internal posts.

Mr. Brown rented a farm at Trimmingham many years, where he zealously adopted all my plans. In conjunction also with H. Playford, Esq., now of Roxley Manor House, Ewell, Surrey, he purchased flax-crops of the growers, and was the first farmer in Norfolk who sent that article to Leeds market. Mr. Brown acquired a competent knowledge of flax-business in all its stages through his own exertions, and was the means of affording instruction to several young persons; proving how much a Farmer may advance the cause, who is not too fearful of trouble.

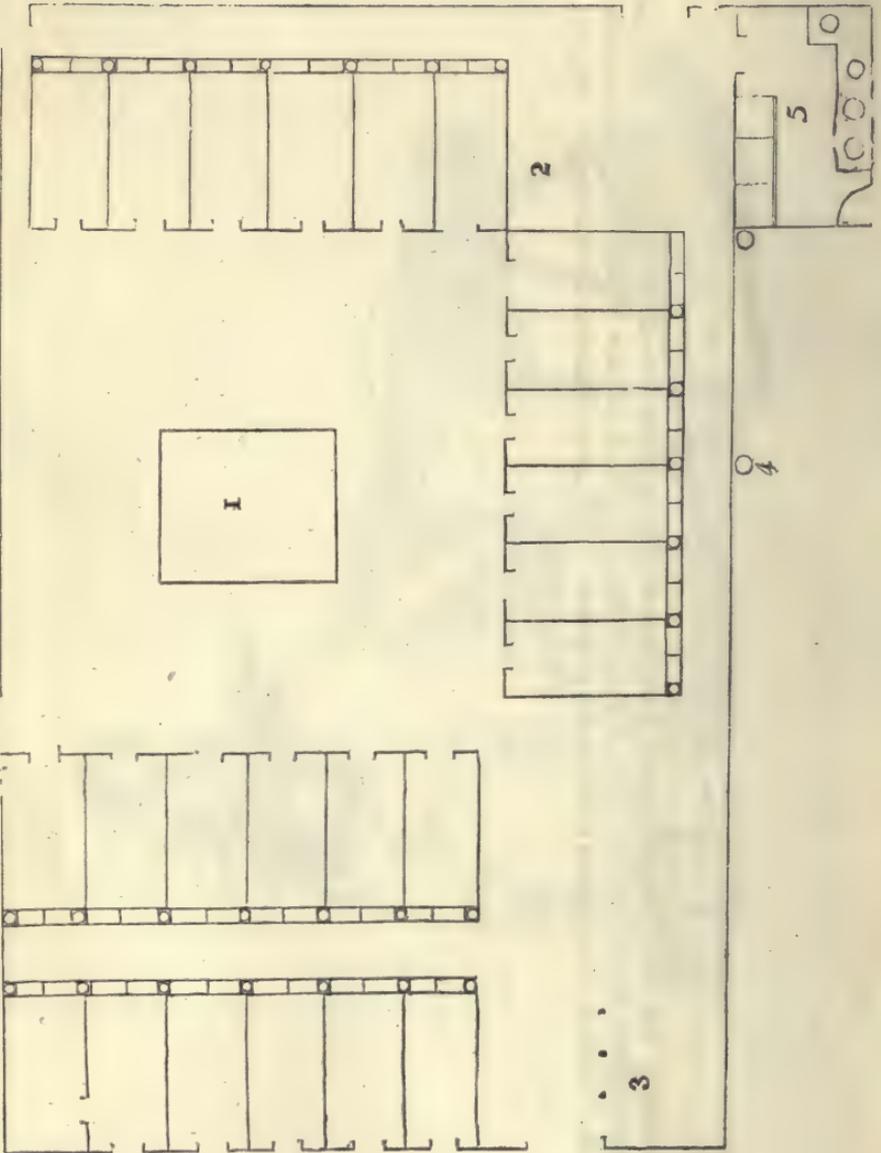
MR. DYBALL'S HAY-CUTTER, NORTH WALSHAM, NORFOLK.



The cutting of Hay, Straw, Grass, &c. &c., into chaff, being an important operation connected with my system, I requested Mr. Dyball, to furnish me with a drawing of his machine, as the best

for those purposes that I have yet seen. My experience of one of them extends to 18 years, during which time, although constantly in use, it has never been out of repair. The price is about 3/.

THE CATTLE-BOXES OF THE REV. J. C. BLAIR WARREN, HORKESLEY HALL, ESSEX.



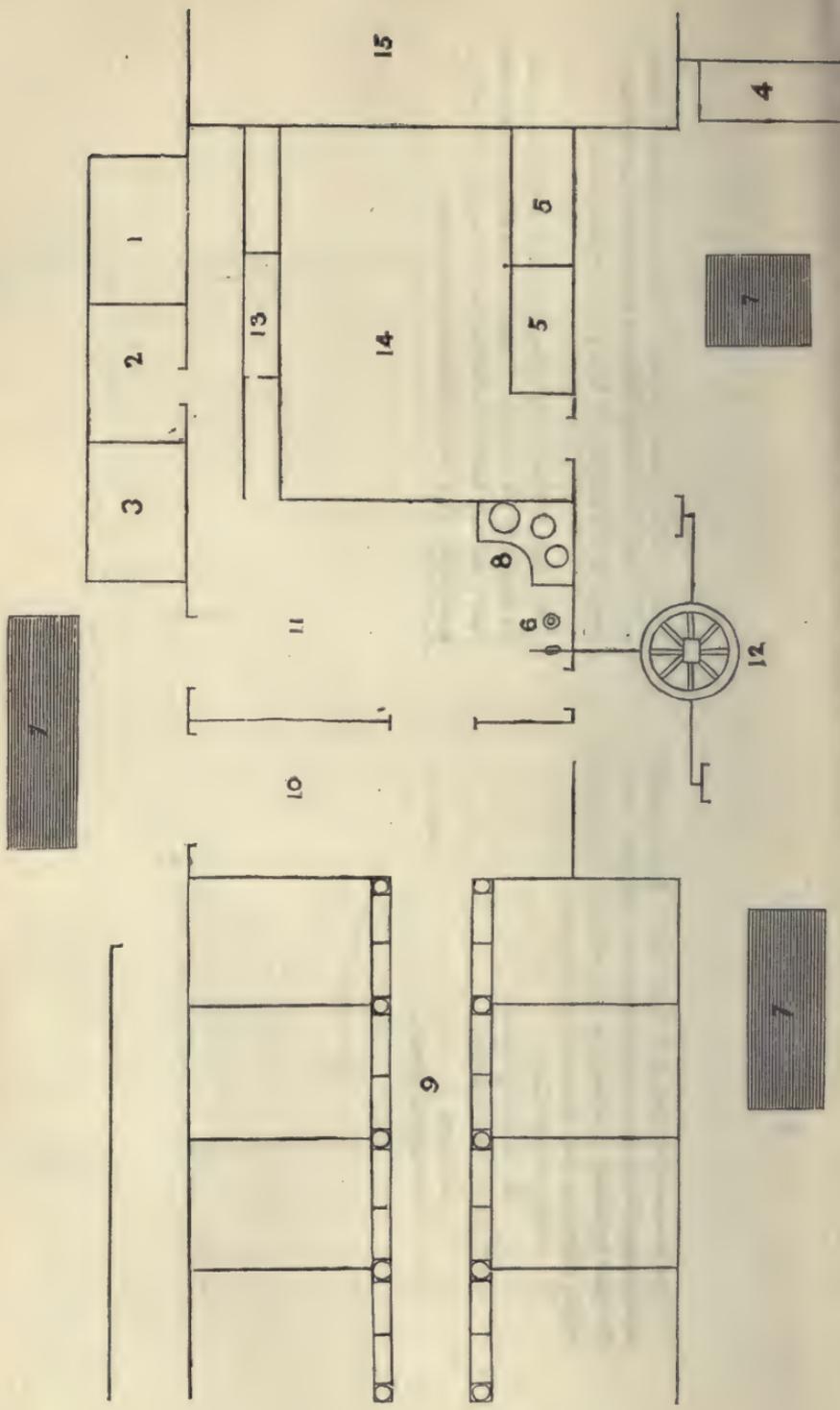
The Cattle-boxes of the Rev. J. C. Blair Warren form a complete establishment, which is conducted with much vigour and success. The plan represents 24 boxes, a portion of which were arranged within an original shed, the remainder being new.

- No. 1. Straw Case.
2. Weighing House.
3. Turnip House.
4. Pump.
5. Cooking House.

On one side of these Premises is a barn, on the other a sheep-yard; which, with many additional boxes, sheds, &c., combine in rendering this gentleman's farm-yard very commodious.

Mr. Blair Warren ranks amongst the very first inquirers after my system, to the principle of which he has adhered for several years; and may also be considered the chief support of the Flax cause in the town and neighbourhood of Ipswich.

THE CATTLE-BOXES OF H. S. PARTRIDGE, Esq., OF HOCKHAM HALL, NORFOLK.



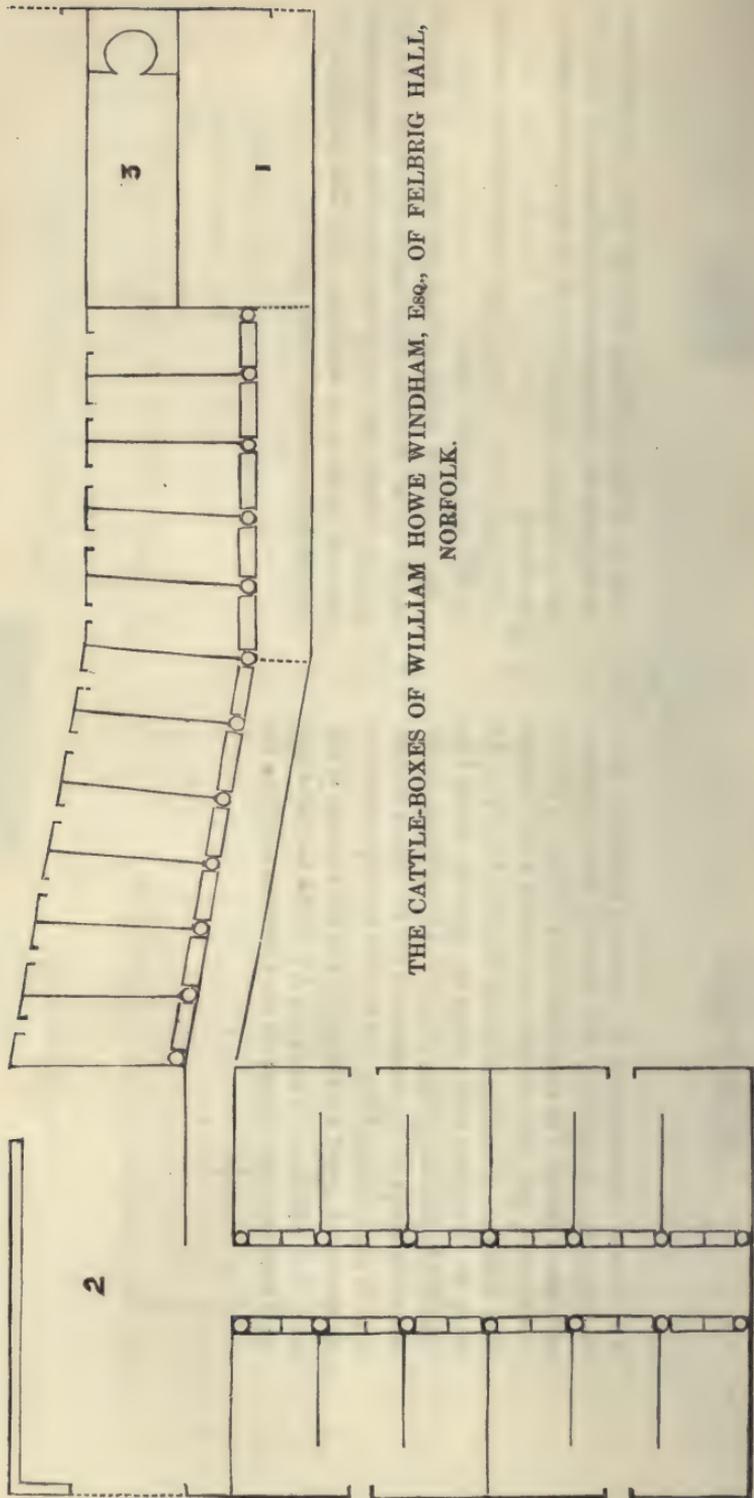
The annexed representation of the boxes and premises of H. S. Partridge, Esq., of Hockham Hall, Norfolk, claims particular attention on account of its compactness, being "multum in parvo."

The whole, with little exception, was formed within original lofty buildings. Above the boxes are chambers for straw; and above the cooking and turnip houses are others for cutting hay, crushing linseed, and storing corn, &c. The machines are attached by straps to the horse-works, No. 12. The plan conveys its own recommendation, and therefore it is only necessary to observe, that 1, 2, and 3 are coal, root, and straw houses; 4, pigsties; 5, 5, calf-houses; 6, pump; 7, 7, 7, mould to receive manure from the boxes; 8, coppers, one containing 60 gallons, the

other 40 gallons; 9, passage, three feet wide; 10, turnip-house; 11, cooking-house; 12, horse-works; 13, cribs; 14, cow-house; 15, barn. The space not numbered at the back of four boxes is a straw-house.

The eight boxes are each about nine feet by eight, excavated two feet, with asphaltic floors.

Fourteen polled Scotch bullocks were fattened in them last winter; two of the number had, therefore, a box each, and both progressed faster than any of the others,—an incontrovertible argument in favour of separation. (See Mr. Partridge's economical mode of feeding his ewes, page 133.)



THE CATTLE-BOXES OF WILLIAM HOWE WINDHAM, Esq., OF FELBRIG HALL,
 NORFOLK.

The annexed ground-plan of Mr. Windham's boxes shows a double range newly erected, and a single range formed within an original building.

Nos. 1 and 2 are cooking and forage houses.

3. A turnip house.

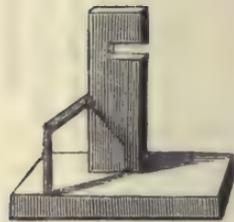
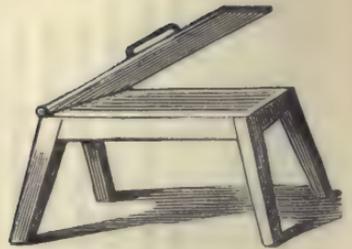
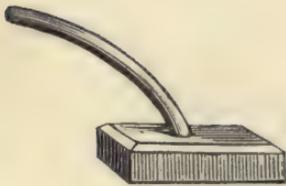
The dimensions of the double boxes are 10 feet by 8 each. Width of the passage, 4 feet 6 inches between the posts. Height from the ground outside to the cill, about 7 feet.

The defect in this plan consists in not having a door to each box, involving much inconvenience and expense for littering the

cattle and removing the manure. A due circulation of air is also impeded, all which defects can be easily removed.

The dimensions of the single row were regulated by certain posts and beams connected with the original fabric. Each box is about 12 feet long by $7\frac{1}{2}$ wide; passage, 3 feet wide.

All the boxes are sunk two feet into the ground; no escape of soil or water is allowed from the cattle, which are kept constantly supplied with dry straw, mould, or sand, according to circumstances. Mr. Windham has other boxes in his own occupation, and also promotes their erection amongst his tenantry.



The above plates, with the exception of the Beetle (see page 116), represent the implements employed in the preparation of flax by hand.

They are all extremely simple, and may be had of Mr. Dyball at North Walsham, maker of the Hay-cutting Machine (see drawing in this volume), for about Fifty Shillings.

LETTERS

ON THE

CULTIVATION OF FLAX.

THE FATTENING OF CATTLE WITH NATIVE PRODUCE,

BOX FEEDING,

AND

SUMMER GRAZING.

LETTERS.

No. I.

To the Editor of ———.

SIR,

I AM sure you will readily afford me an opportunity of offering, through the medium of your paper, some information to the public on the above important subjects, acquired by experience. I desire to do so in a series of short letters, in order that objections may be answered before I republish them in the form of a pamphlet for general circulation. I shall be happy to reply to any public or private communications, as my object is to arrive at, and to promulgate, right conclusions.

Flax, at the present moment, when so many inquiries are being made respecting the proper time and method of harvesting the crop, claims our first consideration.

The proper time, of course, is when the utmost profit to the grower may be secured. In Belgium, early pulling is said to produce finer flax; but when adopted the seed is chiefly, if not entirely, sacrificed. In Holland, on the contrary, early pulled flax, though finer, is considered to be weaker, and to lose much of its weight while being scutched and prepared for market. In Ireland, till within a year or two, no regard was paid to the seed, but now, the Irish are anxious to preserve it. Indeed, the importance of this part of the crop is so generally understood, that comparatively very little flax at the present day is pulled, in any part of the world, till the seed has arrived at maturity.

In this country, where the seed, as an ingredient of the cattle compound, has been proved of such incalculable value, the strictest regard ought to be paid to its preservation; otherwise, the present attempt to cultivate flax must inevitably fail, as did that in 1531, when a statute was enacted requiring that for every 60 acres of land fit for tillage, one rood should be sown with flax and hemp-seed; and in 1767, when 15,000*l.* were proposed to be divided amongst the most successful cultivators of those plants.

At that period the value of the seed as cattle-food was unknown: it was therefore disregarded, and the only chance of remuneration centred in the fibre. But to us flax is a double crop, the most important part of which is the seed. For admitting that the flax will obtain more money at market, yet, the seed being consumed by cattle on the land where grown, diffuses its influence over the whole farm, and returns to the pocket a ten-fold greater profit in the shape of meat and corn, &c., &c.

The *indirect* advantages of growing flax are infinitely superior to the *direct*. It is impossible fully to estimate them; nor can they be ever rightly appreciated till experience has made them sure. In former times the exercise of agricultural skill was extremely limited; and whether flax or wheat, the exhausting effects of a good crop were not easily remedied. Then, sufficient hands were scarcely found to till the soil; now, science has advanced in an extraordinary degree, aided by industry, learning, and chemical research, so that deterioration of soil is no longer to be feared. Besides, we have now an overwhelming population, to find employment for which all the skill of scientific men, and all the efforts of a talented and powerful government, are at a perfect stand: and why?—Simply because they “vainly compass sea and land to obtain an alleviation of our national distress, while the finger of an all-bountiful Creator points to our own soil as the source whence the remedy can alone be derived.” Yes, to our own soil! And I confidently invite the candid and philanthropic mind to survey our present flax crops in Norfolk; to take into consideration the five millions annually expended to maintain people in idleness, with the ten millions sent out of the country every year to

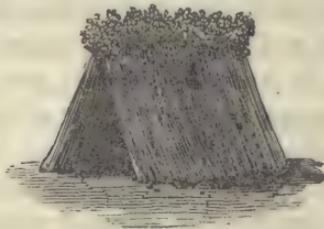
purchase this very crop—to the support and encouragement of foreign agriculture, and to the employment of tens of thousands of foreign labourers; when I am persuaded that he will perceive a door open, by the cultivation of flax with reference to the seed, for universal employment, and consequently for the advancement of our best interests and the overthrow of the ruinous designs of those itinerant demagogues who infest the land at the present day.

Workmen from Belgium have lately arrived in this neighbourhood to assist in pulling and preparing our flax—men of experience, who state that they never saw finer crops, and that they are superior this year to those of their own country.

I returned last week from a journey of 700 miles, undertaken for the purpose of obtaining information respecting this important object. I took with me many specimens of the past and present years' crops of flax, and submitted them to the inspection of experienced persons, all of whom were surprised at the perfection to which we had arrived in so short a time, and agreed in the opinion, that the cultivation of this plant ought to become a national undertaking. At Leeds I had a long conference with the Messrs. Marshall, proprietors of the extensive flax-spinning mills in that town, who renewed their declarations of willingness to co-operate in promoting so desirable an end. No higher authority can be adduced than this eminent firm, because, independent of the influence which their immense purchases must have had in stimulating the growth of flax in foreign parts, they subscribed largely and expressly for that purpose, and are now anxious to promote an extended cultivation of the plant at home. I repeat, that these gentlemen take a deep interest in our present proceedings, and, therefore, any advice through such a medium relative to the pulling of the present crops, must be received with peculiar interest. They recommend us to allow the seed first nearly to ripen in the bolls, then to pull, dry, and stack the flax. Afterwards to thresh the seed from the stalks at our leisure, and prepare the flax for sale with a scutching-mill. Their opinion is, that we are likely to insure a more profitable return upon this system than upon any other. To illustrate their views, I would in-

stance my present growing crops, consisting of about twelve acres, ten of which were sown to obtain the finer description of flax. I consider the seed, merely for crushing purposes, to be worth at least 60*l*. Now, were the flax to be immediately pulled, the whole of this sum would be lost; for, admitting that part of the seed might arrive at a certain degree of maturity, yet the quantity would be so small, and the quality so inferior, that it would not repay the cost of rippling.

The best criterion for judging the proper time for pulling flax, is precisely that which would influence every judicious farmer in shearing his wheat or mowing his oats, viz. :—when the major part of the straw turns yellow, and the kernel of the principal ears brown. With flax, as with those grains, it is perhaps better to begin a little too early than too late. The method of pulling flax is merely to collect a small quantity in the left hand, and to pluck it with the right placed about half way down the stalks. The hands may thus be quickly filled, and the flax laid upon the ground, the bolls of one handful being placed by the root ends of another. Afterwards children carry each handful to the person who forms it into stooks. In



the course of a few days, according to the weather, they may be turned, and when dried to the state in which hay would not heat on the stack, it should be tied up in small sheaves, about twenty-four inches in circumference, and either put into a barn or stacked. Or, if found necessary to tie up the flax before it is sufficiently weathered, the sheaves may be set up in the field. All weeds ought to be carefully taken out of the flax as soon as pulled; long and short stalks should be tied in separate sheaves, which is easily arranged at the time of pulling. Indeed, every process connected with the cultivation, growth, and preparation of the crop, is extremely simple,

requiring the activity of a practical hand more than the efforts of an ingenious head.

I remain, Sir, your obedient servant,

JOHN WARNES, Jun.

July 25th, 1843.

No. II.

SIR,

HAVING concluded my first letter with directions for harvesting flax, I will now proceed to make a few observations upon its value, because at this particular juncture a general inquiry is being made on this point, which of all others is the most important, and respecting which I feel most anxious: for unless a fair profit can be realised, the grower will of course cease to cultivate the plant for the fibre, and the incalculable advantages arising from that part of the crop would be lost to the country. It has been repeatedly shown, that where flax has been cultivated in this neighbourhood, principally with the view of obtaining linseed to fatten cattle, the results have been highly satisfactory, and therefore I entertain no doubt on that head.

The value of a flax crop is twofold—direct and indirect. The direct is the profit in money which the grower obtains over and above all expenses. There are two ways of disposing of this crop, viz. :—while in its green growing state, to purchasers called factors; and next, after it has been properly prepared, to the agent for the spinning mills. The latter I conceive to be the most profitable plan; but the former is the least trouble, and now most practised on the Continent, where the factor pays down the money for the crop before it is pulled, and defrays every after expense.

From the most authentic sources of information, I gather, that flax in the best cultivated districts sells for 25*l.* and upwards per acre, Flemish measure, which is something less than ours. The Messrs. Marshall, of Leeds, inform me that from calculations they have obtained, it appears that the acre-

able value of flax in Belgium ranges from 19*l.* to 25*l.*, averaging 22*l.* 10*s.* per acre, which I expect does not include the seed.

Mr. Trask, of Brimpton Yeovil, Somersetshire, observes, that at the present day flax is only worth about 5*l.* 10*s.* a pack of 240 lbs.; that three packs are grown to the acre, or 51 stone 6 lbs.: this gives 16*l.* 10*s.* per acre exclusive of the seed, which at only 5*l.* would make the crop worth 21*l.* 10*s.* per acre. Mr. Trask adds, that "probably the neighbourhood in which I live, or at least the county of Somerset, grows more flax and manufactures more canvass than all England besides." I therefore conclude, from their growing flax to make such coarse material as canvass, that its quality is far from fine, but that under the improved cultivation, and modern system of preparing for market, it would be worth several pounds per acre more.

Mr. Wolstenholme, of Ireland, had, according to the account in my tract on the Advantages of growing Linseed, 15 acres of flax which produced 1050 stones of fibre, and 345 bushels of seed, the amount of which was 523*l.* 2*s.* 6*d.*; or for seed 129*l.* 7*s.* 6*d.*, and 393*l.* 15*s.* for the flax; or 34*l.* 17*s.* 6*d.* per Irish acre, which being a fifth more than the English, would give us 27*l.* 18*s.* per acre.

Taking therefore the average of the English, Irish, and Belgian accounts, the amount per acre will be 24*l.*, including all expenses.

The crops in England and Ireland this year are extremely fine, of which I have now before me very many specimens sent by post and otherwise; and I cannot doubt but that the most remunerative flax will produce from 40 to 50 stone per acre, and be worth from 8*s.* to 12*s.*, and perhaps 15*s.* per stone; now taking the medium weight of 45 stone, at 10*s.* per stone, the crop would amount to 22*l.* 10*s.* per acre, exclusive of the seed.

I invited the three Belgian flax-dressers employed in this neighbourhood to examine my own crops, which they said were "good, very good," "fine, very fine." They were astonished at the size of my fields, having never seen any so large, entirely with flax, in their own country. We were accompanied by Mr. Watteyne, the son of an opulent flax-merchant in Belgium. While looking over my best piece of six acres, I asked him what

the factors would be likely to give for the flax, provided it were growing in Belgium ; he replied 25*l.* per acre.

The expenses of harvesting the crop and preparing it for sale through all its stages, must, to us, who have everything to learn, be much greater than if we were all thoroughly acquainted with the business. I, therefore, after taking all circumstances into consideration, feel warranted in offering an opinion, that where flax is about three feet long, fine in the stalk and thick in the ground, the grower ought not to take less than about 16*l.* per acre for it, the purchaser being at all expenses connected with pulling, &c.

The seed on no account ought to be sold ; for, in my statements respecting the indirect advantages of growing flax, I shall be able to show that its value to the farmer is inestimable.

My remarks upon the indirect value of the flax crop I shall defer, and allow the subject of box-feeding cattle next to engage our attention, being of more consequence at the present time. I intend next week, if you can afford me space, to offer to the public a sketch, ground plan, and elevation of my boxes as an illustration of the letter that will accompany them.

JOHN WARNES.

August 2nd, 1843.

No. III.

SIR,

A DESIRE to seek at a distance for comforts and benefits that may be had close at hand, is a strong propensity in human nature, more easy to discover than to account for.

The present state of our country powerfully illustrates the above remark ; for we find that the time, talents, and learning of Great Britain are almost exclusively devoted to the search after a remedy for our national difficulties in far distant lands.

Strange infatuation ! paralyzing at once the efforts of native industry, and closing the only avenue through which we can obtain relief.

In forwarding the outline of my Bullock Boxes, I have no intention of claiming the merit of invention, or of originality in any of the experiments that I have made. Were I to do so, I should put myself upon a level with those pretenders who, having obtained patents for their discoveries, deprive the real inventors both of the credit and the profit of their ingenuity.

The system of feeding cattle in boxes has been long partially practised in various parts of the kingdom, and the growth of flax, from time immemorial. The fattening of cattle with linseed was in full operation by the Hindoos 1500 years ago, and in modern times in England, particularly in Norfolk, repeated attempts were made by the most expert graziers to establish the use of linseed, without success.

Summer feeding also in stalls or houses has been long much practised on the Continent and in Ireland. Turn to the pages of the Report of the Royal Agricultural Society of England, to those of the 'Farmer's Magazine,' and to a pamphlet by Mr. Hillyard, of Thorplands, Northumberland, and abundant information on these subjects will be obtained.

In Mr. Baker's valuable essay on the improvement to be made in the cultivation of small farms in Ireland by house-feeding cattle, on green crops, I discovered the great benefits to be derived from that system.

On Mr. Baker's premises, at Acle, I first saw bullocks and sheep fattened in boxes; and, to the experiments of the patriotic Sir Edward Stracey in boiling grain, I added the linseed infusion, and thus produced the incomparable cattle compound. I merely claim for myself the merit of embodying the useful ideas and plans of others, in such a form as to render them a permanent support to every grade of tenant farmer—an effectual protection to the interests of the landlord, and a remedy for the present distress arising from the want of employment.

Allow me to thank you for permitting my letters to appear verbatim. I trust they will not involve you in any heavy responsibility, since my name will be attached to each; nor will they occasion any very lengthened controversy, seeing that the topics advanced are entirely of a practical nature, and easily

solved by question and answer. By submitting my letters to public criticism, before they re-appear in the form of a pamphlet, opportunity will be afforded for objections to be made and removed. Thus, a work of permanent value would be produced, which the landlord, the tenant, and the labourer would see it their best interest to support.

Two objections only have reached me, for which I am much obliged—one through the ‘Chronicle’ of last week, “under the sanction,” it is said, “of the Hon. W. R. Rous,” President of the Norfolk Flax Society; to which I beg to reply, that I write, not for the locality of North Walsham, but for the kingdom at large.—The other, from a respected correspondent, who has erred in not perceiving that I used the word “demagogue” in the plural number with reference to the present state of the united kingdom, and not as a term of “personal abuse to the Anti-Corn-Law League.” Nor do I consider the word “demagogue” by any means abusive. In the pages of Universal History it is always applied to parties similar to those whom I venture to oppose. Look at Wales and Ireland, as well as England! Are not itinerant demagogues vigorously engaged in taking advantage of the prevailing distress amongst the working classes in order to carry out their revolutionary designs?

Already I have in some measure foretold that the “cannon’s mouth might be required to calm our fears; such an expedient is now in force; but, unless work is provided for the people, I repeat that it can only last for a *time*, because the tide of an unemployed population must eventually overwhelm all.”

Can the destruction of Toll-bars, and the non-payment of Tithes, find employment for the people in Wales? Would the Repeal of the Union, and the abolition of the Protestant Church in Ireland, find employment for the starving population of that country? Could a Free Trade in Corn, that would throw out of cultivation half the land in England, find employment for our redundant population?—It would be absurd to suppose so. Yet the promoters of those agitations, and the leaders whom I designate demagogues, allure their followers into the persuasion that the protective duties—the union between England and Ireland—and the security which the laws afford to

private property, are the main barriers against an effectual employment of the working classes at adequate wages. How truly it is said of such men, that "a plausible insignificant word in the mouth of an expert demagogue is a dangerous and dreadful weapon!"

The question naturally arises, what is a demagogue? I reply it is a sort of tumour on the body politic, to reduce which the unskilful physician applies violent repellants, regardless of the seat of the disorder; but the more prudent practitioner first minutely investigates the *cause*—*there* applies the remedy, and the tumour gradually disappears.—The nation at the present time is overrun with these tumours, the cause of which is the want of employment. To supply this want, I continue to propose the cultivation of flax, &c., according to the plans laid down in my pamphlets, which I intend to enforce in the present series.

Cobbett was a demagogue. Some 20 or 30 years ago, he paid a visit to the town of Holt, in this county, and sowed the seeds of disaffection in the minds of many spirited farmers and tradesmen in that place and neighbourhood. Unhappily the seed fell on ground prepared. It took root and sprang up; and when on some public occasion I dined at Holt, the fruit was fully ripe, for amongst other revolutionary toasts, that of Mr. Cobbett's health, with an appropriate sentiment, was proposed. Upon this announcement I promptly turned down my glass. I was observed and called to order, but I firmly resisted the invitation to cheer the man whose politics I perceived were subversive of the best interests even of those who were so eager to propose the toast. A song followed, the chorus to which was "Fall, tyrants, fall."

It is a remarkable fact, that every applauding individual of that party, in a very few years, fell one after another,—became bankrupt, and some were reduced to the extreme of indigence and misery. Throughout the kingdom thousands of Cobbett's adherents met a similar fate. These circumstances I would gladly have related at the meeting of the Corn-Law League at Norwich, with the hope that they might serve as a warning to the tenant farmers of the present day not to be deluded by the insidious suggestions and schemes proposed for their relief.

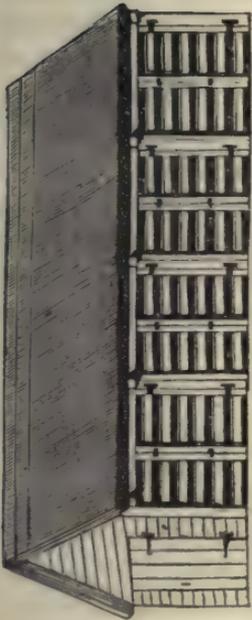
By this motive alone am I now actuated; and most sincerely do I desire that the miseries to which I have alluded may be averted from my countrymen; miseries that not only filled the newspapers with advertisements of the *farmers'*, but of the *tradesmen's* stock; when the value of property was reduced to so low an ebb, that in many instances purchasers were not to be found even at public auctions. The affecting remembrance of those times can never be effaced—times that must occur again under our present circumstances with a free trade in corn. Then will the tenant, who may have obtained the utmost reduction of rent that he could conscientiously ask, perceive too late that land rent-free could not prevent his ruin. The free trade in corn that I would advocate is that which might easily be derived from the millions of acres of waste lands in Ireland, which, like Joseph's granaries, are stored with abundance. To unlock them it only requires the key of enterprise, and then, like Joseph, the Irish would freely give us of their corn in return for our money. The exchange would tend greatly to advance our sister kingdom, and secure our national independence. The supply derived from thence, with a general improvement in our present cultivation, would meet all our necessities. Home commerce languishes for the circulation of those sums annually sent abroad for wheat. To ensure permanent prosperity to the community, it is said, the price of wheat ought to fluctuate at a lower rate; I admit it; but at the same time, I aver that that reduction and fluctuation must be maintained by native resources alone. The price of wheat is immaterial to the farmer, provided he is remunerated, which is now oftener the case, with a plentiful crop and a low price, than with a scanty one and a high price. How anxious then should he be to increase the productiveness of his land, and to render his country independent of foreign aid! This may be accomplished if British farmers are true to themselves. May they firmly resist the temptation to unite in the unreasonable outcry against their landlords! and soon the present storm will blow over, the revolutionary clouds be dispersed, and the sun of national prosperity shine again.

It is impossible for the inexperienced to form a correct estimate of the advantages of box-feeding cattle. The plan is

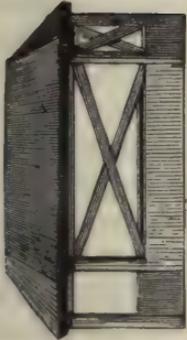
simple and feasible,—its greatest recommendation. Lofty and incomprehensible theories have been too long obtruded upon the agricultural community, to the exclusion of those benefits which were absolutely within their grasp. The farmer's attention has been directed to fattening his cattle upon foreign food, and to the vain attempt of enriching his land by foreign manure, instead of obtaining both from the resources of his own farm. In attempting to point those out, I am sensible that I shall again be subjected to the fate of a prophet in his own country.

The sketch, given in the appendix, represents the elevation of one angle of my boxes, and the ground-plan of the whole, including passages, space for cribs, grinding, turnip, grass, and straw houses. The angle in which the cooking department is situated consists of buildings that were formerly used as stables, &c. The whole is surrounded by a wall. The cost of erecting similar boxes, with the same advantage of a wall, including such materials and labour as could be fairly brought into the account, would average about thirty shillings a box; which will be repaid in less than a year. For instance, if the erection of a box costs 30s., and the bullock fattened in it pays that sum more than he would have done if grazed abroad, the money is, of course, returned to the pocket, and the box remains for future inhabitants. To be more explicit; let twenty bullocks be equally divided, and ten fattened in boxes, and ten in the yard or field. I assert, that the former will pay 15*l.* more than the latter. But, in justice to my own experiments, I must add, that the advantage of box-feeding would be from two to three pounds per head over the field or yard, and the extra expense of attendance amply repaid by the economy of food.

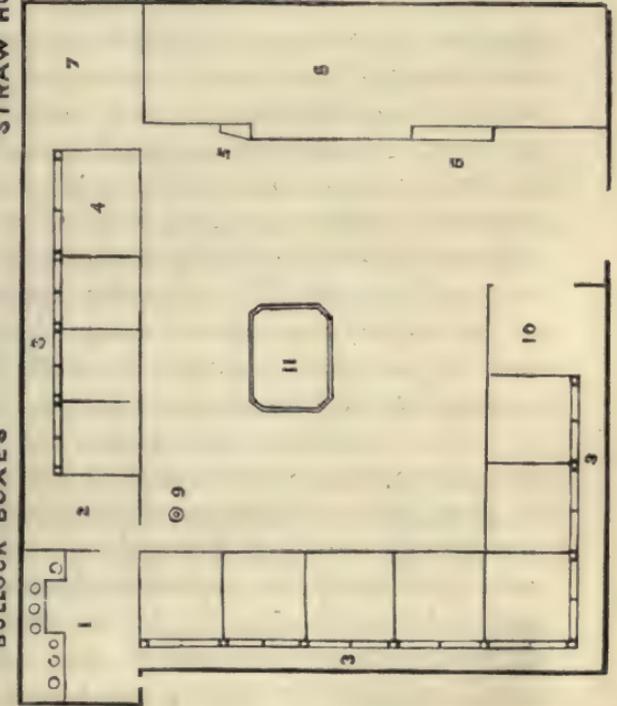
The description of these buildings is difficult, because, however clear and explicit, it must convey ideas of magnitude and intricacy, while neither exists. To make ten boxes, a space will be required of ninety feet long and twelve and a half wide; then let a line be drawn from one end to the other three feet and a half wide from the side most convenient for the passage. Next let the mould, to the depth of one foot, be excavated from the other part, and thrown on the side intended for the front,



BULLOCK BOXES



STRAW HOUSE



- 1. Cooking House.
- 2. Crashing do.
- 3, 3, 3. Passages.
- 4. Large Box.
- 5. Piggery.
- 6. Offices.

- 7. Forage House.
- 8. Barn.
- 9. Pump.
- 10. Turnip House.
- 11. Straw do.

and spread to the thickness of a foot deep. This will give two feet from the bottom of the boxes to the surface. A wall of brick-work four inches wide and two feet high is next to be built round the inside of the part excavated, and intersected at distances of eight feet and a half. At each angle the brick-work should be about nine or twelve inches square, which will both support the posts and afford strength and durability. Upon the wall a sill of wood is next to be placed, for which purpose large poles, either squared or split, are adapted. The foundation being now complete, posts six feet long, and the necessary sills and ties, may be placed upon it. Across the ties the most ordinary poles may be laid to support a roof composed of the trimmings from hedges and ditches, and completed with a thatch of straw or rushes. Two gates, according to the drawing, must be added to each box; one of which is to move on hinges, and the other to be secured to the top and bottom sills of the building, so as to be taken down at pleasure. Presuming that we have taken advantage of a barn or other walls on farm premises, the external part is finished. The internal has merely to be parted off with a few poles between each bullock, and the passage separated by the cribs, which are to move up and down between the interior posts, which are placed upon the angles of each box and support the roof on the passage-side.

The superiority of box-feeding and summer-grazing over any other system, I shall attempt to point out next week; in the mean time, I offer the following questions for the calm consideration of all interested persons; and I hope their calculations will be made with the aid of pen and ink, that when mine shall appear they may be compared, squared, and the balance drawn, and then, I feel persuaded that the account will preponderate much in my favour. But there is a spirit in some men worse than prejudice, which I do not expect to overcome, nor shall I make the attempt. Time is the best developer of all things.

1st. What are the advantages to be obtained by feeding cattle in boxes, with turnips, and with or without the addition of artificial food?

2nd. With grass, with or without the addition of artificial food?

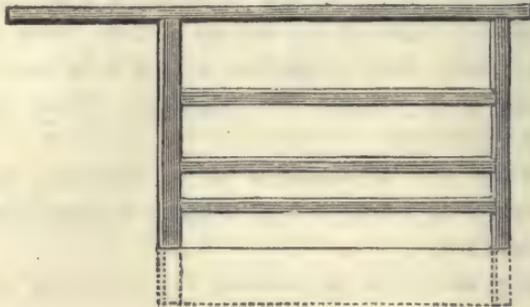
3rd. What extra degree of efficacy may be expected from the box manure over that of the farm-yard?

In conclusion, I would observe that straw-houses are very necessary appendages to boxes. Their shape is immaterial, and structure simple. According to space in the yard, the circumference must be adapted. The earth should then be excavated to the depth of five or six feet, and a wall four inches thick of brick or stone be built from the bottom to the surface, which wall is then to be thickened and raised three feet higher, leaving a space for the door. Upon the wall planks are to be laid, and posts five or six feet long attached, which are to be covered over with a roof according to the elevation. A building of this kind placed near the doors of a barn will be found at all times most convenient to receive straw from the thrasher; and being sunk in the ground, is rendered capable of containing an extra quantity of straw, particularly if trodden down by a horse.

JOHN WARNES.

August 9th, 1843.

P.S.—I subjoin the side-view of the partition-rails, posts, and tie-beam. It will be seen that the space is greater between the first and second rail, than those beneath. The reason for observing this distinction is, that the bullocks may be allowed space to put their heads through, in order that the manure may be firmly trodden by the side of the wall and thus prevent heating.



No. IV.

SIR,

AN enquiry has been made, as to what reference the topics upon which I write can have to politics.

I reply, that with the genuine principles of Whigs and Tories, as such, my propositions do not interfere. But to the schemes of that party who would extirpate British agriculture, root and branch, they are diametrically opposed.

Short-sighted, indeed, must such an inquirer be, who cannot perceive that the want of employment is the source of our national calamities.

The fattening of cattle upon native produce, with the attendant consequences, would increase the demand for labour, one-fourth; that is to say, where three men are now employed, another will be required.

And, with respect to flax, if the nine or ten millions that are now annually sent out of England to purchase this important crop, could be circulated at home by the cultivation of the plant, I think the inquirer would be at a loss to find any redundant population at all.

In St. Andrew's Hall, Norwich, Mr. Moore admitted that the soil and climate of Great Britain were superior to any part of the world for the growth of the plant, but, he added, "The people cannot starve till you grow flax." Mr. Gibson, M.P., alluding to the Norfolk Flax Society, at a Manchester meeting, made a similar exclamation. These gentlemen well know, as do the editors of papers which formerly supported my plans, that, if means were adopted to employ the people, their powers of agitation would cease. That we, as a nation, actually possess those means, it is my constant endeavour to prove. Obstacles and prejudices are rapidly giving way; the force of truth will ultimately prevail; and I am confident that the cultivation of flax, the fattening of cattle upon native produce, box-feeding, and summer-grazing, need only to be nationally adopted, "to obtain for the redundant population the employment, agriculture the support, and trade the encouragement—which each so greatly needs; because the cultivation of linseed, the making

of artificial food to fatten cattle, and the sale of flax, will be fresh sources of wealth to the British farmer; because hands must be drawn from the manufacturing towns to prepare the flax for market; and because an impetus would be given to home-trade in general by the increased price of wages, and by the consequent consumption of all the common necessaries of life."

With these preliminary observations I shall proceed to point out, in some measure, the advantages of box-feeding and summer-grazing over the present system of fattening and feeding cattle in yards or fields. I say in some measure, for however correct my calculations relative to the *direct*, it is impossible to form any adequate estimate of the *indirect* advantages. These flow through innumerable channels, and merge at last into an ocean of national benefits; which, to the eye fixed only upon individual profit, would cease to be discerned; while the sagacious statesman, the moral philosopher, and the Christian philanthropist, will readily perceive and acknowledge their universal importance.

These sentiments may perhaps be considered by some of your readers as too lofty for our humble theme; but be it remembered, that the most enlightened minds ever have been, and still are, devoted with increasing fervour, to the study of agriculture. And I would ask, whence springs our national wealth, if not from the manure that fructifies the soil? Hence, to use the language of the poet,

" Britannia sees
Her solid grandeur rise."

With respect to the calculations promised in my former letter, I would observe, that the advantages of feeding cattle in boxes consist in the absence of all that waste of food, which in a yard it is impossible to prevent. In boxes, opportunity is afforded for placing before each bullock an equal portion of turnips, which cannot be the case in a yard where cattle are indiscriminately mixed.

In boxes, every bullock can eat at his leisure, ruminate unmolested, and take his rest.

In a yard, the master-cattle consume the choicest parts of the

turnips. They delight in goading and driving the underlings about, and allow them but little rest.

Hence the great inequality observable in the condition of yard-fed bullocks compared to those in stalls; and hence the astonishment so often expressed by farmers, that, after their fattest beasts have been sent to market, the remainder thrive rapidly. It is then perceived that those bullocks which appear the least prone to fatten, would perhaps have been the forwardest, had they been separate from the others.

On these several accounts, boxes are much to be preferred to yards; but when artificial food is added to turnips, their value is still further enhanced.—For, if the master-bullock will drive away an underling for the sake of a choice piece of turnip, he will naturally be more resolute to obtain an undue share of oil-cake, or of the still more palatable compound.

In fact, the system of feeding cattle in boxes can be regulated to the greatest nicety; while that in the yard must ever remain slovenly, wasteful, and imperfect.

If such terms as these can be applied to winter-feeding, they are far more applicable to our present system of summer-feeding. To obtain a crop of turnips, neither cost nor trouble are spared, and the greatest skill and anxiety are displayed; while for grass comparatively little expense is bestowed, and little care taken.

Turnips are called the “Sheet Anchor to Norfolk Farmers;” because upon this crop they mainly depend for a supply of manure. Turnips are also called “a necessary evil,” on account of the return for grazing being, in the average of years, less than the expenditure. But grass, except under the denomination of hay, or as an accommodation for lean stock and farm horses, is seldom heard of. Now, were only half the cost and skill bestowed to increase the productiveness of grass, and that grass given to cattle in boxes according to my plans, farmers might fearlessly cut the cable, escape from the sheet anchor and necessary evil at once, and pursue the course which the title to my letters so clearly points out.

I wish it to be understood, that I aim not at the abolition of the turnip crop, but merely at its not being the main dependence for fattening cattle, and for making manure.

From experiments made by several members of the North Walsham Farmers' Club, aided by my own, I believe the average weight of turnips, when deprived of their tops and tails, would not exceed eight or ten tons per acre. From similar experiments with grass in its moist juicy state, I conclude that the average weight would be eight tons per acre; therefore, as far as weight is concerned, cattle would be fed at as cheap a rate on one description of food as on the other. But it appears that they consume at least a third less of grass per day than of turnips; therefore, an acre of grass will go much further than an acre of turnips. But grass does not retain its greatest weight, nor last so long as turnips; true, but provision can be made to meet this deficiency. For instance, on my own farm throughout this summer, an uniform weight and succession of green crops has been kept up, aided for the first fortnight by straw cut short and soaked in boiling linseed meal and water. First, my bullocks began with lucern—next clover—afterwards the second crop of lucern—at the present time the second crop of clover and the third crop of lucern, as fine and heavy as the first.

Perhaps it may be objected that the present season is particularly favourable for grass: true, but last summer it was far otherwise; and yet, with the assistance of early potatoes, upon the plan contained in my 'Suggestions,' the grass was economized, and an abundant supply of food obtained.

And here I must observe, that I cannot enforce this part of my subject better than by giving the following extract from the pamphlet alluded to:—"A piece of lucern, in proportion to the size of every farm, ought to be grown, and a few acres of early potatoes planted—these will always afford a supply, should the grass at any time fail; and they will be found convenient as a change of food. If not wanted, the potatoes of course will remain as winter store. To this system let the use of compound be added, and the farmer will be rendered comparatively independent of turnips, which at best is an expensive and precarious crop."

My present experience corroborates the above statements, and warrants me in asserting, that the profits of summer-grazing in boxes will be found at least equal to those of winter. But, with respect to the advantages of feeding cattle with

grass in boxes rather than in the field, I have not been able to arrive at such accurate conclusions; nor would the limits of a letter permit me minutely to point them out. Let it suffice, that where grass can be produced sufficiently long for mowing [and I should be glad to learn on what farm it cannot] double the quantity of cattle may easily be fed from the same breadth of land.

Indeed it would be difficult to offer an opinion as to the quantity of grass that land in general might be made to produce, or the number of cattle kept; for, by the application of manure, clover will yield three successive crops in one season. I have no doubt but that this description of grass on the best lands in Norfolk often produces 12 or 16 tons per acre; nearly the whole of which is made into hay for winter store—the fattening qualities destroyed—and the opportunity of grazing a quantity of cattle, and obtaining a supply of superior manure, thrown away. I repeat, fattening qualities thrown away, because who ever saw a bullock fattened exclusively upon hay, or a horse that could perform his ordinary work through the winter with hay alone?

From an experiment that I made last year, it appears that the weight of grass, when made into hay, is reduced about six and a half to one; that is to say, eight stone of grass will make only one stone and a half of hay.

I had grass weighed to six horses three weeks since; when they consumed at the rate of forty-four stone per day. Now had these six horses been fed exclusively upon hay, I calculate they would have eaten eighteen stone per day. To obtain eighteen stone of hay, according to the above experiment, 96 stone of grass would be required. But the horses ate only 44 stone, which is 52 stone less. Therefore we may fairly assume that, if every eighteen stone of hay had been given to cattle in the form of grass, it would have gone as far again. But observe, this merely applies to the first mowing.

Boxes are, I am happy to say, being erected by many agriculturists in my own neighbourhood, and in other parts of the kingdom. And ere long, I expect that a farmer will as soon think of turning twenty bullocks into twenty acres of turnips as into twenty acres of grass.

Many observations upon the efficacy that may be expected from the box manure over that of the farm-yard must be deferred till next week.

JOHN WARNES.

August 30th, 1843.

No. V.

SIR,

IN accordance with my plan of answering objections to the above subjects, I cannot allow the letter which Mr. Richardson, of Heydon, published in the *Norwich Mercury*, and also in the *Farmers' Journal*, to pass unnoticed. "Let me ask," he says, "does a farmer like trouble? Will he go daily and see the fire lighted, the boilers cleaned, his articles properly crushed and meted out in due proportions, properly boiled, cooked, cooled, weighed, and given to his cattle? I may say, for the whole brigade, no, no. They are not men of that sort. I am a bit of a farmer myself, and have some little knowledge of their likes and dislikes."

It is extraordinary that this gentleman could venture to include all the farmers of Great Britain under the fanciful term of "a Brigade," which is merely a detachment from the main body of an army. But, perhaps, he had principally in view the tenant-farmers on the Heydon estate, under his own immediate influence. These, perchance, he might array against the cattle-compound. But I can assure him that, encamped around North Walsham alone, is a large army brave and true, which unflinchingly encounters "buildings, boilers, steamers, crushing-machines, troughs, tubs, and even poles" that cost two shillings per dozen; an army that is daily being augmented by the most industrious, enlightened, and intelligent agriculturists in that neighbourhood, who have shaken off their allegiance to foreign oil-cake; and despite of the phantoms summoned from the depths of Mr. Richardson's imagination, are determined not only to see the fire lighted, and the boilers cleaned, if need be, but also to see the "Articles" [which form the compound] properly crushed and meted out, boiled, cooked,

weighed, and at last given to their cattle. I repeat, that a multitude of farmers and gentlemen, stimulated by the North Walsham Club, had the courage last year to encounter these horrors; and all came off victorious. In the present year, legions of agriculturists are mustering; not only in this, but also in distant counties. They are fast buckling on their armour to engage in this new and lucrative branch now added to the routine of farm-business. But observe, instead of boilers, steamers, crushing-machines, troughs, tubs, and poles, all the apparatus really required worth notice, where the grinding is done at a mill, consists of an iron copper, at the cost of about twenty or thirty shillings, and a three-pronged fork, like Neptune's Trident, to stir up this ocean of national wealth.



With respect to Mr. Postle, and the members of the North Walsham Farmers' Club, to whom Mr. Richardson has alluded, they require not my feeble aid to rescue them from the odium of having attempted to palm on the country a fictitious report. But I must express my astonishment that a mind so acute as Mr. Richardson's is reputed to be, should not have perceived the propriety of minutely enquiring into the particulars connected with the experiment in question, before an essay was made to turn it into universal contempt. Had this honourable course been pursued, Mr. Richardson would have avoided the errors with which his letter abounds. He would have discovered, also, that farmers were governed by the laws of reason and the dictates of common sense; and not, as he expresses it, by the "Likes and Dislikes" that regulate the actions of the brute creation.

For example: The North Walsham Farmers' Club is governed by certain rules, one of which enjoins the discussion of such subjects only as were proposed at a previous meeting. Another, that no topics of a political tendency shall be introduced, or any thing irrelevant to the direct advancement of agriculture.

Amongst its large body of members are enrolled the names

of Lord Wodehouse, W. Windham, Esq., and many of the gentry and clergy in that part of the county, independent of all party considerations.

The fattening of cattle upon native produce formed the subject of many consultations, experiments, and tests. The system was fully developed in my pamphlet and letters, and particularly illustrated at two meetings in the town of North Walsham, convened by advertisements and circulars, of which the following are extracts:—

“NORTH WALSHAM FARMERS’ CLUB.

“*The Hon. W. R. Rous, President.*

“An especial meeting of this Society will be held on Thursday, the 19th of May, for the purpose of ‘Enquiring into the results of experiments made by several members of the Club, in grazing bullocks with linseed compounds instead of oil-cake.’ Cattle, and samples of the compounds with which they have been fed, will be shewn in the yard of the Bear Inn, at four o’clock. At the same time linseed will be formed into compound on the spot. The public are cordially invited to a critical investigation of the exhibitions, and also to join the club in the evening’s discussion on the importance of fattening cattle on native instead of foreign produce.

“G. GOWER, Hon. Sec.”

At this meeting Mr. Richardson himself was present; and in consequence of his doubts and scruples, some of the bullocks were sent back with an assurance that they should be re-exhibited at some future time, of which due notice would be given.

Accordingly, on the 28th of October, Mr. Gower again issued an advertisement in each of the Norwich papers, and distributed nearly a thousand circulars, chiefly by post, inviting the public to the annual meeting and dinner of the Society, and to the exhibition especially of the bullocks shewn on the 19th of May, which were to be slaughtered on the occasion, &c.

The cattle were shewn, killed, weighed; and the result of the experiment explained much to the satisfaction of a very

crowded and influential assembly ; but Mr. Richardson did not appear, though a circular was directed particularly to him. Reporters, however, for the Norwich, Bury, and Ipswich papers were present, whose detailed accounts, it was thought, aided by the forcible and appropriate remarks of the Editors, could not fail to convince the most sceptical. But the persevering caviller and the inveterate bigot, being in their very nature incurable, remained of course unconvinced.

To counteract the baneful influence of such folks, the North Walsham Club offered by a challenge through the Norwich and London papers, to test the merits of the compound with oil-cake ; which challenge not being accepted, Mr. Postle determined to try the experiment upon his own premises, which he did in the most impartial and correct manner. In the mean time the public were invited to inspect the cattle, and the new mode of grazing, through a letter in the county papers. Numerous visitors, some from considerable distances, availed themselves of the opportunity ; and on the 12th of May, in particular, two or three hundred persons examined the cattle. In due time Mr. Postle advertised the day when his bullocks were to be shewn and weighed on Norwich Hill. During the whole of this period, namely, from the 19th of May, nothing was heard of Mr. Richardson till after he had written his letter, a document fraught with incongruity.

For instance, he observes in his letter addressed to the Editor of the *Farmers' Journal*, " You must, or at least those who sent forth the facts, ought to have recollected, that the six compound beasts had an average of twelve stone in their favour when put to feed. This twelve stone has not been deducted either from the time when weighed fat, nor when slaughtered. So, the real facts are, that the six compound beasts, when fat, did not weigh twenty stone more than the others, but just eight. And when slaughtered, not fifty stone six pounds!!! but just thirty eight!!!" He adds further, " I suppose you intend to make the compound cattle a present of these articles [alluding to boilers, &c.] as you did the twelve stone at the beginning." But what a mistake!!! whether wilful or not, an extract from the Report of the experiment in question, contained in the above journal, will best determine.

“When selected, which they were by lot, the six beasts to be fed on compound weighed 602 stone, and those to be fed on oil-cake, 590 stone. When fat, the live weight of the former was 725 stone; of the latter, 705 stone, being a difference of eight stone [the 12 stone overweight at the first being deducted] in favour of those fed on compound. But it was in the dead weight of each lot that the greatest difference was shown—the compound-fed yielding 44 stone nine pounds of meat more than those fed on oil-cake; but, taking the loose fat and hides, the difference in favour of the former was 50 stone six pounds,—or 38 stone six pounds, deducting the 12 stone original extra live weight. While there is this *increase* of produce, there is a considerable *decrease* of expense between those fed on home produce, and those fed on foreign oil-cake. The former consumed a smaller quantity of turnips than the latter; and the cost of the compound was only 19*l.* 6*s.* 1½*d.*, whilst that of the oil-cake was 21*l.* 14*s.* 9*d.*

“The public are much indebted to Mr. Postle for the great care with which this experiment has been carried through; and for the pains taken to procure an accurate and satisfactory statement of the result.”

But perhaps it may be asked, from what source was the London journal furnished with the information? I answer, from the best of sources—the clear and explicit report of the *Norfolk Chronicle*. Again, it may be asked, did Mr. Richardson see this report? I reply, that he receives the *Farmers' Journal*.

In concluding his letter, Mr. Richardson sagely remarks—“Far be it from me either to insinuate or charge any gentleman connected with this matter, of publishing that which is untrue.” And yet, he accuses a committee that was never formed—a party that never existed, with having “withheld information,” and “done themselves great discredit,” that their “statements are incorrect” and “accounts fallacious,” evincing “a want of candid, open, and honourable disclosures.”

Thus has Mr. Richardson evinced a wanton hostility towards the promoters of a great and beneficial cause; and, to use his own words, “done himself great discredit.” I say, a great

cause, because the efforts of the North Walsham Farmers' Club are directed to the welfare of the labourer, the interest of the farmer, and the security of the landowner. Knowing the peculiarity of Mr. Richardson's position relative to those several parties, the club invited him to their meetings, in order that he might be enabled to adopt a system that would tend to improve the barren lands of Heydon and of Cawston, and to confer a permanent benefit upon the proprietor, the tenantry, and the poor.

It was unquestionably his duty to have enquired diligently into the merits of a measure fraught with such incalculable advantages to agriculture as the substitution of native produce for foreign oil-cake, and to have tested Mr. Postle's experiment by a similar process, before he ventured to denounce it so unscrupulously and so unjustly. If Mr. Richardson could be "startled" at Mr. Postle's announcement, how will he be alarmed at the sound of my forthcoming report on fattening cattle with native produce! Severe as the shock may prove, prejudice must at last be conquered. Yes, conquered—because what power can withstand the force of profit? for profit, like mercury, penetrates the joints and marrow, conquering more surely than the point of the bayonet. Encountered at every turn by profit, his whole "brigade," too, must ultimately be overcome.

Without this powerful ally, I am aware that my letters and varied labours would be unavailing. Could I call to my aid the eloquence of Demosthenes, and the charms of Cicero, they would fail to move the British farmer; but when he knows that I am on intimate terms with profit, he will cease from a contest, the prolongation of which can only serve to retard his own advancement.

I must now, contrary to my original intention, bring this letter to a conclusion, without proceeding with my main subject. The above strictures will occupy more space in your columns than I expected. Therefore, with your permission, I will resume the even tenour of my course at a future opportunity. In the mean time I shall visit distant counties, by invitation, to communicate with influential parties on the important subjects

of this series. On my return I shall be happy to afford the public, through your valuable journal, any useful information that I may be so fortunate as to obtain.

JOHN WARNES.

Sept. 9th, 1843.

No. VI.

SIR,

AN account of the excursion to which I alluded in the conclusion of my last letter, is in some measure anticipated by the report of the meeting of the Ipswich and Ashbocking Farmers' Club. To this meeting I was invited as a preliminary step to the formation of a Grand National Association to carry out my plans of finding employment for the redundant population of the United Kingdom through the cultivation of flax, the forming of the seed into food to fatten cattle, and the fibre into an article of manufacture.

I had previously been introduced to several highly influential parties in London, Sussex, and Essex; and it was to me infinitely gratifying, that, though separated by distance, and many unknown to each other, they all acquiesced in the desirableness of such an establishment.

At Ipswich arrangements will be made upon an extensive scale, to afford the clearest information relative to the above object, by an exhibition of flax in all its stages, the various processes connected with its preparation for market, and the method of forming the seed into cattle food. Model boxes are to be erected, crushing machines and steamers will be exhibited at work, and every description of agricultural machine submitted to inspection. In fine, neither expense nor pains will be spared to render the exhibitions at once interesting, instructive, and profitable.

This year many acres of flax were grown, and many bullocks fattened with linseed compound in the neighbourhood of Ipswich. The result of these experiments proving satisfactory, several

gentlemen were induced to inspect the extensive crops of flax, and the system of grazing in Norfolk. The information thus derived, added to their own experience, originated the present patriotic undertaking; an undertaking which is being conducted with a spirit and decision that insure success.

To the Ipswich and Ashbocking Farmers' Club am I peculiarly indebted for the prospect of personally advocating those projects to which my time and my pen have been so long and so successfully devoted—successfully, because the increased employment afforded in the parishes where flax has been grown, and the compound used, is the realization, upon a small scale, of the effect that must follow a universal adoption of my plan.

In my pamphlets and letters, independent of the present series, I have shown the value of the flax crop in this, and in foreign countries—that from nine to twelve millions a-year are annually sent out of the country for the purchase of flax, linseed, oil, and cake, to the encouragement of foreign agriculture and to the support of foreign labourers—that this important crop can be produced from our own soil, and would provide abundant employment both for the rural and for the manufacturing population—that the circulation of the above millions would repeal the poor rate, abolish union workhouses, secure to the labourer a just rate of wages, to the farmer a remunerating price for his produce, and to the landowner the value of his property; also that the clergyman, the manufacturer, the merchant, and the tradesman, would all reap a proportionable benefit. I have shown that the agitations in Wales for the abolition of the poor law and tolls, in Ireland for the repeal of the Union, and in England for free trade, universal suffrage, and a paper currency, are chimerical schemes, because if all were enforced no adequate employment could be found for the people. I have endeavoured to prove that the remedy for our national distress can easily be derived from our own soil, and that native skill and industry only require encouragement and support to render us independent of foreign resources either for food or for clothing. That, instead of being importers of barley and meat in the shape of oil-cake, we might annually export largely of barley in the shape of flax; and obtain, from the cultivation of this prolific plant, infinitely more tons of

linseed to fatten our cattle than were ever received of cake from foreign countries; also, that the appropriation of a large breadth of land to flax would enhance the price of barley in particular, and enable the farmer to place the proceeds of his grazing account in his own pocket rather than in that of the foreigner. I have shown that a compound made of linseed and grain is superior to foreign oil-cake; a fact that has been proved on many farms in Norfolk and Suffolk, and exemplified with peculiar clearness by Mr. Postle's experiment, whose six bullocks fattened on compound paid, in the short space of six months, nearly three pounds per head more than an equal number fed on oil-cake. I have recorded three public meetings at which the method of making this food was exhibited; also the speeches of the noblemen and gentlemen present on those occasions; with other documents showing the immense advantage that the British nation would derive from the cultivation of flax. In consequence, experiments have been made by gentlemen in many parts of the kingdom, who have forwarded to me samples of their flax, with descriptions of the soil whence grown; from which I gather, that the most ordinary land, under proper treatment, will produce flax of the finest description; and that the adaptation of our country to the culture of this important plant is indisputably proved.

I have shown that flax is worth more per acre, and affords more employment, than any other production of the earth, and that the acreable value of good flax to the grower varies from 15*l.* to 50*l.* per acre; but I have not ascertained its worth when manufactured into linen or other articles of commerce—I believe, however, several hundred pounds per acre. From a document now before me, I perceive, that an extensive cultivation of flax was strongly recommended in 1742 as a source of permanent employment. Since that time Acts of Parliament have been passed, and premiums offered, to encourage its growth. But for the space of 15 years no candidate appeared to claim a premium. I have shown that the objections made in those times to the growth of flax, are, in the present, completely removed. For, under the improved system of management, instead of impoverishing it enriches the soil; and that its introduction into our rotation of crops would be of in-

estimable service to the agriculture and commerce of this country.

It may be objected that the ingenuity of man is always devising schemes to obviate the necessity of employing workmen. True. But if a fair proportion of mental power were brought into the opposite service, this difficulty would be overruled, and the most beneficial results accrue. Let mind encounter mind, and thought meet thought. And while one party succeeds in closing a door to maintenance, the other will immediately open a new one. For instance, machines called Mules and Iron-men have thrown thousands of able-bodied operatives out of work, and reduced the wages of others to a starvation price; while, on the other hand, the cultivation of flax has commenced, which only requires to be nationally adopted to obtain for the redundant population the employment, agriculture the support, and trade the encouragement, which each so greatly needs.

To insure success, a clear recognition of the solid principles of Christian philanthropy, and an unconquerable determination to bring them into operation, are indispensable. Upon these principles will our project be conducted, aided by a code of rules and regulations which will doubtless receive the sanction and support of every true lover of his country.

It is impossible, upon the present occasion, to enter into every minute particular; but I offer the following outline of the plans suggested, that the public may form an idea of the nature and design of the projected institution, and be induced to strengthen the cause by their co-operation.

It is proposed to limit the existence of the Society to the period of four years; and that no expenditure of time or of funds upon yearly entertainments, or upon anything foreign to the direct object, will be allowed. Hence it will be seen that expedition, zeal, and perseverance will be the distinguishing features of the Society's proceedings. That the interests of Farmers' Clubs, Agricultural Associations, and Local Institutions, be especially advanced. That instructions for preparing the land, sowing the seed, and after-management of the flax crop, be afforded through working agents. That suitable persons be provided to teach children the art of spinning flax,

and of converting it into useful articles.—That premiums be given to cottagers for growing flax in their gardens, and to their children for spinning and knitting the yarn into stockings and gloves.—That information on the most improved modes of husbandry, the new system of grazing with compound, summer feeding in boxes, &c. &c., be effectually and speedily disseminated by the location of experienced labourers for a few months where needed, in exchange for others to be taught on farms from whence those labourers were sent: that while some were communicating, others would be receiving instruction. The wages of these men to be paid by their employers, and the cost of their journeys by the Society.—That an interchange of visits be promoted between intelligent agriculturists of different counties, and their travelling expenses paid by the Association.—That similar facilities be afforded to gentlemen of leisure and patriotism, whose services, in attending public meetings, and in conferring with interested parties, would be of the utmost importance. Lastly, that a weekly paper containing an account of all the Society's proceedings, and affording authentic information of all important agricultural topics, be regularly forwarded to every subscriber, that through this medium correspondences might be conducted, intelligence conveyed, and scientific experiments recorded.

I hope that this brief outline will in some measure convey suitable ideas of a project that aims at the benefit of all, and at the injury of none; a project, which, if carried into execution, will open wide to the poor the doors of maintenance, admitting work and wages, liberty and independence, peace and contentment, without infringing upon the rights of private property or endangering the safety of the State. I entertain no fear of not realizing these happy results, provided the possessors of the soil support our cause. Upon their decision, and upon the aid and co-operation of British philanthropy relative to the above patriotic designs, hangs the fate of thousands. Nor can it be supposed that the necessary funds will be withheld, when we consider the twenty millions expended for the emancipation of the West Indian slaves; the eight hundred thousand annually subscribed to Foreign Missions, to instruct heathen nations in religion and in the arts and sciences of civilized life; the

costly Niger expedition, to introduce British husbandry into Africa, to establish model farms, and to teach the natives the value of their own soil and of their own people, while millions of acres of our own land lie waste, and thousands of our labourers, for want of work, are reduced to a state of misery and destitution that appals the hearts of those who desire to relieve but possess not the means. These and similar instances might be adduced to show the immense amount both of public and private money devoted to advance the interests of those whom we never see, while the wants of multitudes of our own people, whom we see every day, remain neglected and forgotten. Christianity accepts not zeal in the cause of foreign duties as a compensation for the neglect of those at home. "These ought ye to have done, and not to leave the other undone."

I hope that the above remark will not be considered as condemnatory of missionary labours. But I wish to impress every considerate mind with a conviction that, were only half the zeal and talent, with a trifling per centage on the sums referred to, expended upon improving the condition of our own people, the face of this country would soon wear a different aspect, our national difficulties be removed, and a noble work accomplished that would at once redound to the credit of man and to the glory of God.

I am, Sir,

Your most obedient Servant,

JOHN WARNES.

Oct. 9, 1843.

No. VII.

SIR,

HITHERTO I have experienced your undeviating support in promoting the above objects for the benefit of the rural population; with what success, the recent meeting at Ipswich can best testify. Our efforts have resulted in the formation of a National Flax Association, the medium, I have no doubt, through which the country at large will derive all the benefits

that I have so long predicted. For obvious reasons the wheels of so mighty a machine cannot be set in motion without considerable preparation. In the mean time, I desire to draw your attention to claims nearer home—even to those of your fellow citizens. So inseparable is the union between the agriculture and home commerce of this great country, that it is impossible for one to be advanced or depressed without the other being similarly affected. They are the main pillars of national prosperity; for when provisions and wares meet a ready sale, the labourer and artisan are employed, and the farmer and tradesman flourish. Constant work facilitates consumption; it is therefore our duty and interest to promote employment in every possible way, both for the labourer in the field, and mechanic in the city.

Under this conviction, I have been led to consider how far the manufacturing towns in England would be benefited, provided the agricultural districts in which they are situated derived those advantages from the cultivation of flax, and the use of the seed, which I anticipate. It appears to me, that all would reap considerable benefit except the city of Norwich. The reason is obvious. Norwich does not manufacture the articles which the agricultural population of Norfolk consumes. She is, comparatively, the retail shop, at a prescribed profit, for the manufactures of other places. For instance, Manchester, Birmingham, and Sheffield, manufacture the articles required by the rural districts. The artisans, therefore, of those towns derive increased employment and wages, according to the demand from, and prosperity of, the country. But as Norwich merely sells the manufactures of Manchester, Birmingham, and Sheffield, the briskness of trade in the retail shops produces no corresponding advantage to the artisans of the city. The value of the goods wrought by them is not so materially influenced by agricultural prosperity as to occasion an advance in the rate of wages. Hence the slightest rise in the price of provisions lessens their means of subsistence and increases their misery.

If these remarks can be applied to the operatives who are actually employed, with how much greater force may they be directed to those who have no work at all, and who eke out a

wretched existence, mainly depending upon inadequate rates, and uncertain charity. The branches of trade in which these unfortunate men were engaged, flourished only with the fashion of the day. Hence the extinction of their means of support. I am not speaking of an idle rabble, but of the genuine Norwich operative, to whose skill and ingenuity the whole world bears testimony—for what quarter of the globe is unacquainted with the admirable productions of the Norwich factories?

Seeing, then, that a return of agricultural prosperity to the county of Norfolk would not produce the desired relief to the artisans of Norwich; and seeing that the interests of Manchester, Birmingham, and Sheffield, are advanced when success attends the plough; it must, unquestionably, be of paramount importance to Norwich to establish within her walls a trade that would produce a reciprocity of commerce between the city and the county. Undoubtedly the establishment of factories in Norwich to supply the country with those things to which I have alluded, would, eventually, be of great benefit to the city. But as other places would be injured by the transfer, and no real benefit conferred upon the community at large, I aim not at removing the trades of one town to another. My desire is to see established in the city of Norwich, a new, lucrative, and permanent branch of business. And, if there is one branch more suited than another to the genius, habits, and present circumstances of the citizens, that branch is the linen trade—a trade for the introduction of which peculiar facilities abound, in unemployed capital, machinery, and men; a trade that would quickly render her citizens famed for their exquisite ingenuity, as unrivalled in the splendour of their damask linen, as they now are in the elegance of their shawls; a trade among the numerous ramifications of which, the business of bleaching is not the least profitable, and for the conducting of which the atmosphere and meadows around the city are singularly adapted; a trade that would receive a constant supply of the raw material, not from foreign resources, to the profit of foreign farmers, and to the employment of foreign labourers, but from her own county, to the profit of Norfolk farmers, and to the employment of Norfolk labourers. Thus would money flow from the city to the country, and from the country to the city,

and a reciprocity of interest be cemented, to the incalculable benefit of both. As a lively illustration of our future prospects, I subjoin an extract from a letter received a few days since from a correspondent, residing in the Isle of Man, whom I have never seen.

“Glen Villa, near Douglas, November 7th.

“DEAR SIR,

“At the desire of Mr. Hardy, of Violet Hill, I visited a flax mill belonging to Mr. Hutcheson, of Market Hill (an agent for the purchase of flax for Messrs. Marshall, of Leeds), who has some improved machinery for breaking flax, and who intends exhibiting it this week at Belfast, for the 100*l.* prize. It did the work very well. Four girls broke sufficient for 14 scutchers and cleaners-off. I was astonished to see in the yard 161 stacks of watered flax, waiting to be dressed. But my surprise was much increased when Mr. Hardy told me that in Armagh and Tandragee markets, from eight to ten thousand pounds' worth of flax was sold at each market-day—had commenced as soon as any was ready, and would continue until about Christmas.

“I remain, yours truly,

“RICHARD NECKLIN.”

The above account so remarkably corroborates my own statements in St. Andrew's Hall, on the 6th of January last, that I cannot refrain from repeating them on the present occasion.

“Methinks I see the flax market at Norwich, like the Thursday market at Tandragee, which I lately witnessed in Ireland, and the farmers busied in selling flax, and putting the ready money in their pockets. It was a cheering sight, but not a very brisk day; yet flax to the amount of three thousand pounds was sold by farmers, whose occupations were all extremely small, not one of which, as I understood, exceeded fifty acres.”

The walls of Norwich are surrounded by many thousand acres of ordinary land, much of which now lies uncultivated and

neglected, under the supposition of being worthless. It appears, however, from recent experiments, that all of it, if properly prepared, would produce flax of a very superior quality, and leave the land ever after in a better state for producing other crops. Much of the land lies so near the city, that the inhabitants could, in the summer, issue from her gates in the morning, perform the labours of the flax-fields, and return in the evening. In the winter, they would find ample employment in the various processes connected with the preparation of the fibre for market. That the climate is congenial, the flax grown by Mr. Wm. Herring, and by Mr. Matchett, in the heart of Norwich, bore ample testimony at the late exhibition at Ipswich. Thus it appears, that Norwich possesses the power not only of manufacturing, but also of affording great facility and encouragement to the growth of flax. Now, that which might be imprudent for private enterprise to undertake, would be the height of prudence for the combined interests of Norwich to attempt. For instance, no individual would venture to cultivate the land now lying waste on Mousehold-heath, because he must incur a certain loss; but were Norwich to make the experiment, a profit would certainly be obtained; because, if the thousands of pounds that are expended every year in rates and charity upon the able-bodied operatives, were paid to them in the form of wages, for trenching, manuring, and preparing the land for a crop of flax, the value of every bushel of seed, and every stone of flax so obtained, would be returned to the common stock a clear gain; for the labour, the money, and the land are now lost entirely; to which may be added a sufficient supply of manure, that might be easily preserved, without interfering with the farmer's soil-cart, or the scavenger's perquisite. Common sense, under the influence of sound Christian principle, invokes the authorities of Norwich to make the experiment; and if they inquire, whether I have any additional grounds to substantiate my calculations upon as to the future productiveness of this barren land? I refer them to soils of a similar description, that have produced fine flax and fine seed, without any extra tillage. 1st, From the heath at Witton, on the estate of the Right Hon. Lord Wodehouse.—2nd, Upon the hills at Sherringham, belonging to Abbott Upcher, Esq.—3rd, From

the heath at Stratton Strawless, on the property of Robert Marsham, Esq., and at Snare Hill, grown by H. C. Partridge, Esq. These references are sufficient, I trust, to guide the most critical inquirer; if not, I can readily offer him many more. But of all the successful and convincing experiments that I could advance, by far the most important to our present project is that made by Mr. Feltom, upon one of the worst spots of Mousehold-heath itself; the crop of seed from which was of an excellent quality, and the stalks of flax ranked amongst the finest at the recent exhibition at Ipswich.

But it may be objected that the habits and constitution of the Norwich weaver are ill-adapted to the work required. I reply, that about forty years ago, the weaving trade failed in the villages around Aylsham, and the men were reduced to the greatest straits. At that period my father purchased the Bolwick Hall Estate, adjoining which was a tract of what had a few years before been common land, lying nearly in its original worthless state. To improve it, many hands were required, and my father, yielding to the numerous applications for employment, set the weavers to dig, trench, level, and otherwise improve the land in question. At first, they were paid only a few shillings per week; but when their hands became seasoned, arms nerved, and sinews braced to the work, they received the usual rate of wages. Thus was land reclaimed, and rendered fruitful through the instrumentality of just such men as those in Norwich, who could as easily reclaim and render fruitful the worthless Mousehold-heath. To what quarter then are we to look for objections to measures that would render a barren soil productive—ease the city rates—lessen the calls of charity, and improve the condition of our fellow-men, whose unparalleled sufferings excite our deepest sympathy, and claim our utmost exertions to alleviate; sufferings which, to the credit of the city, draw forth yearly charitable contributions exceeding, it is said, in amount that of the whole poor rate; sufferings that the philanthropy and piety of both city and county have long expressed an anxious desire to remove? But they can never be removed in any other way except by employment. If the clouds showered down gold and silver in abundance upon the people, the idleness engendered by such a supply

would more than counterbalance the good effected ; for as idleness is the root of all evil, so is employment at the root of all civil, moral, and religious order. If, then, alms-giving, when substituted for employment, is an evil in itself, it becomes the duty and privilege of every religious and benevolent mind to co-operate in the furtherance of any reasonable plan, having for its object the employment of a redundant population. I desire to see Mousehold-heath dug up principally as a relief for the present exigency, and as a preliminary step to the future introduction of the linen trade to the city ; preparatory to which, of course a large supply of flax would be required, and from no source, I argue, could that supply be obtained at so cheap a rate as through the labour of those who are now maintained in idleness, and through the cultivation of land that is now lying waste. I by no means despair of a flourishing business being established ; for a piece of linen has already been woven in Norwich during the past few weeks, and I believe another is now in hand ; but the progress of private enterprise must, of necessity, like the grass that grows before the starving steed, be too slow to benefit the present generation ; whereas, an immediate and simultaneous adoption of my plan would, in the course of a few months, produce the desired effect. For if the people were now set to dig, manure, and prepare the soil, the seed might be sown in March or April—the crop be fit to carry off the land in June or July, which could then be sown with turnips, and the flax be ready in August for the manufacturer.

Thus would the ground-work be laid, I repeat, for the establishment of a new, lucrative, and permanent branch of business, conducive to the best interests of home commerce on the one hand, and of foreign trade on the other ; permanent, because as linen ever has been one of the most useful and favourite articles for domestic purposes, so it will remain till the end of time. The citizens of Norwich therefore have no cause to fear a recurrence of those melancholy consequences which have often resulted from failures in the manufacture of fancy goods, and which are too truly depicted in the wretched state of those who have fallen victims to the change of fashion. Neither need the farmers of Norfolk apprehend the want of a ready market for

their flax, because the supply, although imported to the amount of nearly six millions a year, is scarcely equal to the demand. In truth, the flax-spinners of England require a more abundant supply, from our own resources, and at a cheaper rate, in order that the price of linen may approximate to that of calico. This, I am persuaded, can be obtained, and would be the means of finding employment not only for the redundant rural, but also for the manufacturing, population. The limits of a letter will not admit of lengthened arguments to prove the soundness of my theory. But it must be evident to every inquirer—1st, that such an immense quantity of flax as we now import is subjected to many heavy charges, and that many thousands of foreign hands were employed to prepare it for exportation. 2dly, That if we grew an equal quantity in this country, it would require just as many thousands of our own hands to reduce it to a similar state. These would have to be mainly drawn from manufacturing towns, because the rural labourers would be wanted to prepare the seed, form it into compound to fatten cattle, and perform the labours consequent upon the new system of grazing.

An apprehension has been expressed, that my object in introducing the cultivation of flax was to supersede that of corn—to raise the price of provisions and lessen the means of subsistence; hence the loudly expressed alarm, “We cannot eat flax.” It certainly might appear to the superficial reasoner that the appropriation of land to the growth of flax would necessarily diminish the supply of wheat. But a careful investigation of the subject will soon disperse this fear. It will be discovered, that the best flax is grown upon wheat stubble—that upon strong soils, in particular, flax is an excellent crop to precede wheat—that as flax will flourish on newly broken-up soils it will evidently be the means of bringing into regular cultivation large tracts of barren land—that it will require less than two acres to every hundred now in cultivation, to supply the present demand for flax, independent of foreign aid, from which infinitely more tons of linseed would be obtained to fatten cattle than were ever imported of oil-cake in one year—that, throughout my pamphlets, previous letters, and present series, published during the past four years, I advocate con-

stant work at adequate wages, and not only cheap bread, but also cheap meat for the people; showing, from the result of successful experiments, that, through the cultivation of flax, the fattening of cattle with native produce, box-feeding and summer grazing, three bullocks and three sheep may be fattened where only one of each was kept before; and that it did not require a very profound calculation to discover, that a triple quantity of manure thus obtained would produce a corresponding increase in the productions of the earth, the price of which is immaterial to the farmer, provided he is remunerated, as is oftener the case with a plentiful crop and a low price, than with a scanty one and a high price. I rejoice that measures are being adopted for a vigorous extension of the above system through every part of the kingdom. Already much progress has been made, and I look forward with renewed confidence to no very distant date, when the manufacturer shall not have cause to complain that the high price of the common necessaries of life prevents his successful competition with foreign markets.

I cannot avoid expressing my surprise, that those who profess so much sympathy for, and who depict so truly the horrors consequent on, non-employment, should attempt to thwart measures that would at once obtain the desired relief; should offer their vague and empty theories in opposition to solid and permanent benefits;—rejecting the good within their immediate reach in order to grapple with phantoms which never fail to elude their grasp—holding out to starving mortals the blessed prospect, that with “six shillings a week” a man is to maintain himself and family, and fare sumptuously upon provisions drawn from foreign resources, to the encouragement of foreign farmers, and to the employment of foreign labourers. To such monstrous propositions mine are diametrically opposed. They have been often recorded, and centre in the desire to advance the rate of wages, maintain the value of British property, and preserve that proud position in the scale of nations which we have so long enjoyed, recognising to the fullest extent that portion of British property which the poor man alone possesses—viz. his labour. In support of these principles a National Association has been formed; to co-operate in the designs of which the above lines are offered as an invitation.

Unbiased by all party considerations, I freely offer my services to the city, and shall be happy to confer with any influential parties in promoting so desirable an object as that of reclaiming Mousehold-heath, and of rendering it subservient to the present necessities, and future prosperity of Norwich; and I doubt not but the patriotism, philanthropy, and piety of the city will respond to the call; and "then shall the earth yield her increase; and God, even our own God, shall bless us."

JOHN WARNES.

Nov. 22nd, 1843.

No. VIII.

SIR,

IN submitting the eighth number of my series to the public, I am aware that I shall be subjected, as on former occasions, to the charge of exaggeration; but I cannot, on that account, relinquish the task I have undertaken, seeing that daily experience substantiates all my former statements, and warrants me in the use of expressions still more glowing than any I have yet employed.

Let the sceptic then stand by, and behold his more enlightened and less prejudiced neighbour advancing his own interests, and promoting public good, by the adoption of those plans which are attended by such unvarying success.

It is with much gratification that I add to the increasing list of converts to the above system, the name of W. H. Windham, Esq., of Felbrigg Hall, in this county, who, after the successful use of Compound, and the growth of Flax during the past year, has offered to facilitate the erection of boxes, in order that his numerous tenantry may adopt the new system of winter and summer grazing upon their respective farms.

Thus has Mr. Windham set a noble example, which, if followed, will assuredly secure to the labourer employment, to the tenant a remunerative price for his produce, and to the landlord the value of his property.

There is no gentleman in the county to whom the inquirer

can look with greater confidence than to Mr. Windham, whose natural acuteness, partiality to agricultural pursuits, and constant residence upon his estate, eminently qualify him to lead the way in a movement of so much importance to the nation.

As Mr. Windham is an example to landed proprietors, so is his steward to all with whom similar trusts are reposed. His inquiries and conclusions on my premises last week evinced a thorough regardlessness to trouble, so long as there was a prospect of advancing his employer's interest; and I am not without a hope, that the mention of this circumstance may rouse other farm-stewards to a sense of their duty.

The time has arrived, when the farmer's profit neither *can* nor *ought* to depend on a high price for wheat. It cannot, because of the rapidly increasing population, the major part of which, being born to poverty, must necessarily be maintained on cheap bread.—It ought not, because it is the duty as well as the interest of the farmer, to meet their wants by increased production; his duty, because the soil is a talent committed to his charge for the benefit of others—his interest, because the more he can make the earth produce the greater will be his gain.

The legislature aimed at obtaining cheap provisions through the corn bill and the tariff, not being aware, I suppose, of the immeasurable resources of this country, or why offer a stimulus to foreign, rather than to British, agriculture?

The Anti-Corn-Law League point to the half cultivated fields, and tell the starving population that the landlord and tenant are cumberers, not tillers of the ground. However just or unjust this reproach, I strenuously maintain, that a sufficient supply of the common necessaries of life for the population of the kingdom can be obtained from our own resources, provided the system of grazing double or triple the number of stock were carried into effect; because it is but reasonable to infer that double or triple the quantity of manure would necessarily increase production. Besides, the vast additional supply of meat would lessen the demand for wheat—equalise the price of each—enable the poor to purchase one as well as the other, and obviate the necessity of foreign aid. To whatever quarter we turn, the price of meat in particular is found too

high for the consumer. It also too low for the farmer. The reasons may be traced to his not rearing more stock—to the waste of grass in the summer—of straw in the winter, and to the purchase of foreign oil-cake and artificial manures. These things I have repeatedly pointed out, and am convinced that, by a methodical and economical use of native resources, every farmer could afford to sell his fat cattle at one-fourth less than the present price, and realise what is now seldom the case, a clear profit.

Of all subjects connected with agriculture, that of rearing and fattening cattle is the first in importance; for, the manure so obtained is the only means of keeping a farm in high condition, being suitable to all soils, durable in effect, and therefore cheaper than any other.—In order to obtain so large an accession of cattle as I contemplate, more must be more bred—fewer killed when young, and none allowed to live till they are four or five years old. The fattening so many calves during the summer months is much to be deprecated, because their original value for rearing is sunk in the low price of veal, while their lives are required to keep down the price of lean stock. If, then, it is an evil to kill them so young, it is equally so to keep them after they have arrived at maturity, especially when fattened to a degree that renders the greater part unfit for the table. The Christmas cattle-shows exemplify the justice of this remark, being masses of fat manufactured for the tallow-chandler, rather than of wholesome meat for the community. In this way, many thousands of pounds are sunk and much food destroyed every year. I calculate that many of the animals lately exhibited at the Bazaar in London, did not realise the cost of grazing by 30*l.*, 40*l.*, or 50*l.* each. Could the system of rearing summer calves be generally adopted, farmers would soon be in possession of cheap herds of cattle. To any objections that might be made on account of milk being wanted for cheese, and the inability of the calf to withstand the approaching winter, I refer to the linseed-compounds as excellent and economical substitutes for milk, and to the boxes as an effectual protection against the inclemency of the weather. From observation and a little experience, I am led to conclude, that calves are brought up in summer at much

less expense, trouble, and risk, than those in winter, and therefore make a more profitable return. I could offer several calculations to prove the correctness of this theory, did time and space permit. The object of this letter has reference more to fattening than to rearing cattle, and to proving that double, or even triple the present number may be profitably returned, through the medium of linseed-compound, box-feeding, and summer-grazing. The fear of trouble ought not to stand in the way, nor need the farmer be under any apprehension on the score of outlay, as respects the cost for boxes, crushing-machine, cooking apparatus, and the increased number of cattle he would be compelled to keep; because the expense for boxes, in most cases, if erected according to the description in No. 3, would not amount to more than 20 or 30 shillings each; for iron coppers and crushers, about eight pounds upon a farm of two or three hundred acres; and for bullocks, I have shewn, and now repeat, the lowest priced pay the best.

For instance, I sold in November last, three small bullocks, bred in the early part of the summer of 1842, one of which was purchased at 4*l.*, on the 11th of March last; another at 3*l.* 3*s.*, on the 13th of April last; the third was bred on the farm, and valued at 4*l.* 10*s.*, on the 11th of March last. Two of them were Durham heifers, the other Norfolk bred; their ages 18 months each when killed. The first weighed 46 st. 7 lbs.; the second, 41 st. 2 lbs.; the third, 35 st. of 14 lbs. to the stone, making 122 st. 9 lbs., which at 6*d.* per lb., the current price of beef in this neighbourhood, amounts to 42*l.* 18*s.* 6*d.*; and, had I sold them by weight, would have afforded a balance of 31*l.* 5*s.* 6*d.*, and a profit unexampled in the agricultural history of this country; unexampled on account of the shortness of time, the size of the animals, the smallness of the outlay, and the food being entirely the produce of the farm. Should it be asked, what was their condition when purchased? I refer to the cost price, which the practical inquirer will perceive admitted only of what the chemical farmer would term "a very minute development of flesh."

These bullocks, with about twenty others, were, last year, fattened on my farm consisting of 76 acres only. They were all

kept in boxes during the summer as well as in the winter months—were treated in every respect alike, and made similar returns; some were disposed of within four, others eight months, averaging about six months each, and speaking volumes in favour of the cultivation of linseed, the fattening cattle upon native produce, box-feeding, and summer grazing.

I have now twelve bullocks under similar treatment, but instead of grain or pulse I substitute hay or straw, with a few turnip tops, and barley "colder," all cut into fine chaff, with an extra proportion of linseed. Upon this plan a compound is formed more economical and rapid in its effect than any I have hitherto used. The reason is obvious. Linseed will raise flesh and fatten faster than anything else; therefore, the more a bullock can take without being disordered, the greater will be the effect produced. Boiled barley alone is slow in effect and will not repay; but when linseed meal is incorporated with it, the progress of the animal is greatly accelerated. Corn, therefore, acts chiefly as a vehicle to convey the linseed to the stomach, an office which any thing of an absorbing nature, suited to ruminating animals, will perform as well with an extra quantity of linseed meal.

According to the recipes in the 'Suggestions,' compounds are made of about one part of linseed meal to two or three parts of corn, or pulse, or at the rate of eighteen pence for the former, and two shillings and three pence for the latter. I now take away the corn entirely, and add instead nine penny worth more of linseed meal. Thus eighteen pence is left for the hay, &c., which is double their value. Hence nine pence is saved by this compound. But when its bulk and satisfying nature are taken into account, it will be found that a small quantity only of turnips is required; which confirms my oft-repeated opinion, that, the expensive and precarious turnip-crop ought no longer to be considered the sheet-anchor of Norfolk farming—an opinion the correctness of which is established upon the following fact, viz.: this year, according to my usual rotation, I should have grown about 12 acres of turnips; instead of which I sowed six with linseed, and one acre with potatoes, leaving five with turnips. Of the two

latter more than half remained unconsumed. Observe, the potatoes were used chiefly for pigs, a few only were given to the bullocks in the form of compound.

And now a question naturally arises as to the correctness of Dr. Playfair's theory, that "Oil-cake produces only fat, being destitute of nitrogen; and that by adding corn, which possesses nitrogen, to linseed oil-cake, meat will be developed as well as fat." To this opinion I never could accede, because I have seen cattle fed in stalls exclusively with oil-cake and water, which increased both in flesh and fat. In April last, my own farm-horses were fed with wheat straw cut into fine chaff, and immersed in boiling linseed meal and water till all was absorbed. With this they worked ten hours a day, and looked better than when on hay and corn. I also kept some poor bullocks upon the same food, which increased much in condition. These instances, added to my present experiments, led me to the conclusion, that linseed possesses both flesh and fat making properties in an eminent degree.

But perhaps Dr. Playfair will exclaim, "'Tis the combination of material that developes meat as well as fat." True. But straw incorporated with linseed or cake, is like the boy who carried his father's spade, and observed on their return home, "What a good day's work we have done;" or the bellows-blower, who congratulated himself and the organ-player upon the plaudits obtained by their joint performance.

The correctness of these illustrations may easily be proved by giving a bullock, that would be termed "fleshy," nothing but straw to eat, and he will rapidly decrease in condition. At the same time, let another, but little better than a skeleton, be fed with straw well incorporated with boiling linseed meal upon the above plan, and, before many weeks the flesh-making properties of the seed will have performed their office. In making these brief observations, I wish it not to be supposed that I undervalue chemical research; on the contrary, I still hope that some permanent good will be effected thereby; though I fear the time is too far distant for the present race of practical farmers to reap the benefit. Theories, however ingenious, must yield to the results of experiment; which

in agricultural matters, I, in common with many others, have too often proved to be fallacious.

My recommendations being in their nature practical, simple, and applicable to every grade of farmer, are constantly adopted. The most gratifying accounts are daily forwarded to Trimmingham from various parts of the kingdom. While writing this letter, I received the following communications, which, I am sure, will be acceptable to all who take an interest in the subject :—

“ *Tunbridge, Kent, Dec. 22nd., 1843.*

“ Lord Torrington’s compliments to Mr. Warnes, and would feel obliged by his informing him whether a pamphlet called ‘ Suggestions on Fattening Cattle with Native instead of Foreign Produce ’ is to be purchased in London. Lord Torrington having found great benefit from feeding cattle in the manner Mr. John Warnes has advised, is anxious to obtain some of the pamphlets to give to his friends.”

From the Maidstone Journal.

“ It will be recollected that, at the Cattle Show dinner, Viscount Torrington stated, that his prize beast was probably the cheapest animal ever fattened, adding, it was fed on the compound recommended by Mr. Warnes, which his lordship was induced to try through the instrumentality of Mr. Cull, of East Tarleigh. We trust this mention of the subject will serve to direct attention to this most useful and economical preparation.”

The publication of Lord Torrington’s experience may perhaps be considered unnecessary in Norfolk, where the use of compound is now so generally adopted ; but it ought to be remembered, that this letter will be read by many landowners, who may be induced by his lordship’s example to prefer the produce of their own estates to that of foreigners, and by many occupiers, who think there is no virtue in any thing but foreign oil-cake. In fact, nothing is required but the united determination of these two great interests to provide for the people

an adequate supply of all the common necessities of life. In addition to those advantages which I have pointed out, it will be seen, that the fattening of double or triple our present number of cattle must be attended with a corresponding increase of hides and skins, wool and tallow, bone dust, &c., &c. Included would be our flax and linseed crops, amounting altogether to many millions a year, and involving so great a demand for labour as must necessarily insure prosperity to the agricultural and commercial interests of this country.

I remain, Sir, your obedient servant,

JOHN WARNES.

Jan. 1st, 1844.

No. IX.

SIR,

AT the commencement of this series, I pledged myself to answer any objections to the above topics, whether of a public or private nature, in order that truth might be elucidated, my letters republished, and a work be produced, which the landlord, the tenant, and labourer, would see it their best interest to support.

In consequence, I have been, and still am, engaged in correspondence with many influential and intelligent parties in various parts of the kingdom; and I rejoice to say that the cause which I advocate daily gains ground. 'Tis true, that it has been subjected to some opposition; but, in every instance where reason and generosity have been brought into exercise, prejudice has been removed.

In my former numbers, I endeavoured to point out the advantages of fattening cattle upon native produce, box-feeding, and summer-grazing. But in the present, I desire to draw particular attention to the importance of the flax crop, with reference, principally, to the value of the fibre as a source of employment to the labourer, and of profit to the

grower. I say principally, because in no instance did I ever advocate the cultivation of flax for the sake of the fibre exclusively, being persuaded that, by judicious management, a profitable crop of seed might be obtained also, and the objections to its culture removed.

Hitherto I have only been able clearly to show that the cultivation of flax, primarily for the seed, would fully repay. Peculiar circumstances have prevented me from satisfying public curiosity relative to the intrinsic value of the stalks; but the following accounts will assist me, in some measure, to "solve this problem," and be acceptable, till full proof can be made of my own extensive crops, as well as of those of my neighbours, correspondents, and others, in this and distant counties, amounting to several hundred acres, of which many specimens are in my own possession, and will be exhibited shortly at Norwich and other places.

I subjoin a letter of the Hon. W. R. Rous, published in the 'Norwich Mercury' on the 30th December, as a document offered to me in common with the rest of the community, for the purpose of being turned to the best account. All who peruse it will, of course, be at liberty to form their own opinion, and to act accordingly. But the responsible position in which my publications have placed me, renders it necessary that I should point out the mistakes which Mr. Rous has made, and the erroneous conclusions to which he has arrived, lest it should be thought that I have been employing "figures of rhetoric" and indulging in "idle visions" to "deceive the public;" and, what is of far greater consequence, lest this great cause be retarded, in which the interests of the farmer, the security of the landowner, the prosperity of the manufacturer, and the welfare of the poor are involved.

That this great undertaking should be opposed by the Hon. Gentleman just at the time when the fruits of my labours become apparent, is a mystery that shall, at some future opportunity, be unravelled. My present explanation will counteract, I trust, the baneful tendency of his letter; a letter that has been hailed by many Anti-Corn-Law papers, and joyfully disseminated by them throughout the kingdom. And

why? Because they hope it will contribute to retard a cause which, if successful, must inevitably defeat the mad schemes of that revolutionary party.

“ To the Editor of the Norwich Mercury.

“ DEAR SIR,—In matters of business practical men prefer figures of arithmetic to figures of rhetoric—plain facts to idle visions; I have, therefore, taken up my pen for the purpose of undeceiving the public, by a simple statement of the probable *future* cost of growing and preparing an acre of flax ready for spinning into yarn; also to state the proved value of an acre of very superior flax grown by myself and worked at North Walsham. The soil was a first-rate flax soil, rich light loam—in good heart, sowed 2nd April.

	£.	s.	d.
Rent, tithe, and rates	2	0	0
Two winter ploughings	0	12	0
Spring harrowing down, ploughing, sowing, and bushing .	0	11	0
One thousand gallons of liquid manure	0	15	0
Three bushels of seed	1	0	0
Weeding and pulling crop	1	2	0
Steeping, drying, re-tying, &c.	1	0	0
Scutching 54 stone of flax, at 3s. per stone	8	2	0
	<hr/>		
	15	2	0
Value of crop :	<hr/>		
54 stone of flax, at 9s. per stone	24	6	0
	<hr/>		
Balance	9	4	0
	<hr/>		

An ample profit; but 54 stone of flax is vastly beyond an average crop, and 9s. a stone can only be obtained for a superior fibre; besides, land in general would require an outlay of 3*l.* in manure per acre. To be concise, I am perfectly sure, that unless the manufacturers can afford to give 8s. a stone for the flax after being scutched, the farmer cannot afford to grow it. When this last fact is ascertained, as it will be, before the general meeting of the Flax Society held in February, the

problem will be solved, whether the culture of flax can be sufficiently followed up to be an extensive source of employment for our labourers.

“ I am, dear Sir, your obedient servant,

“ W. ROUS.

“ P.S.—Where the flax has been grown for seed, generally speaking, the fibre has not paid for the labour and cost. Indeed, I have no proof of its having been profitable in a single instance; but there is some now working which promises well.”

If any one has reason to rejoice at this account, I have: because, notwithstanding its glaring defects, it tends to establish, not only the correctness of all my statements, but also that of my arithmetical calculations. I refer to the second number of my series dated August 2nd, headed “ Value of the Flax Crop to the grower;” wherein I showed from English, Irish, and Belgian reports, that the value per acre of good flax would be 24*l.* including all expenses, which is six shillings less than the amount of Mr. Rous’s crop. I also estimated our best growing crops at 40 or 50 stone per acre; and the flax at 8*s.* to 12*s.*, or 15*s.* per stone, exclusive of the seed. The accuracy of this estimate I rested on information derived from personal inquiries in Ireland, from similar opportunities in England, from reading authentic works, and from an extensive correspondence. In pamphlets and public letters I laboured to communicate my experience in easy and comprehensible terms, in order that my most unlearned readers might profit. I say laboured, because the scholar will acknowledge that the difficulty of writing a few sentences of plain common sense is greater than that of many pages of rhetorical flourish.

I have no wish to lessen Mr. Rous’s estimation of the practical men to whom he alludes. But, of his letter, I must observe, that it will not raise their reputation either as men of business, of figures, of facts, or of rhetoric;—of business, because they never attended either to the steeping, grassing, or scutching of the flax in question;—of figures, because their account is extremely defective in many items which the prac-

tical man would have added to the list of expenses (certainly he would not have put down one pound for seed when the real quantity was a barrel containing three bushels and a half, and that cost 45s.; nor would he have allowed 3s. per stone for scutching, when experienced hands could readily perform the work at 2s. 3d., or even at less per stone);—of facts, because no mention is made of five stones of tow, of several bushels of seed and chaff threshed from the stalks, nor of the after-crop of turnips, which, being grown in the same year, ought to have been added to the account, as the rent, rates, and tithes are now all charged to the flax-crop;—of rhetoric, because Mr. Rous's first-rate flax-soil has not produced so profitable a crop as many soils of a quality far inferior, yet better adapted to the growth of first-rate flax. Nor is 9s. per stone by any means "the highest price that can be obtained for superior fibre." Mr. Demann, the Belgian, who prepared Mr. Rous's flax, grew some himself at North Walsham, by way of experiment, which he estimates at twenty shillings per stone. In truth, flax varies from even below five to twenty-five shillings per stone. Again, that "land in general would require an outlay of three pounds per acre in manure" is contrary to the experience of every grower. Were so much applied, it would in most cases greatly injure, if not entirely destroy the crop. That "land in general" should require four times more manure than Mr. Rous's, is an assumption that agriculturists "in general" will regard as a flash of rhetoric, rather than as a matter of fact. Experience has shown, that to grow flax to perfection land should be in so fine a state as to require no manure at all. I could annex much information on this point from authentic documents, wherein it would appear that most of our flax was grown last year without the direct application of manure.—I select one:—

"Ormesby, 31st October, 1843.

"DEAR SIR,

"My flax was drilled on the 24th of March, on a wheat stubble without manure. My intention was to grow it for the seed, till you advised me to get the fibre also, for which

I expect to obtain 12*l.* or 15*l.* per acre. I have sent a sample of the seed taken from the stalks when pulled, and afterwards dried on a sail-cloth in the sun. The produce 16 bushels per acre, which will pay the expense of pulling, steeping, &c.; and when given to cattle crushed, or as compound, will return a valuable manure to the land. I sincerely hope your endeavours to promote the cultivation of flax in this country may be crowned with success. It is only by giving employment that we can expect to raise the labouring classes above the depressing and contaminating circumstances with which they have to contend.

I remain, dear Sir, yours very truly,

“RICHARD GLASSPOOLE.”

“*To John Warnes, Jun., Esq.*”

My neighbour, Mr. Brown, grew several acres of flax, and has ascertained the weight of an acre to be 53 stone 6 lbs.; this was grown principally for the sake of the fibre, and yet he obtained 16 bushels of seed. Two acres were sown by the side of this flax for seed primarily, of which he had 43 bushels, and a fibre as fine as the other. Mr. Harlee Playford, of Northrepps, made the same experiments with like results. I could also refer to Mr. Smith, of Gunton; Mr. Cubitt, of Witton; and numbers of other growers, whose crops, besides my own 12 acres, are very abundant. As a quietus for the present, I will just mention that Mr. Barrett, of Barney, tenant to Lord Hastings, threshed out an acre of flax that produced six coombs of seed, and so excellent a crop of strong flax that he sold one-half of it for 11*l.* to a rope and twine spinner at Holt, who is now engaged in making the finer parts of it into yarn and twine, the coarser into rope and line, and the refuse into door mats, &c.

With regard to Mr. Rous's declaration, that “unless the manufacturers can afford to give 8*s.* per stone for the flax after being scutched, the farmer cannot afford to grow it;” the following calculation upon an average of 35 stone an acre only, with the average rental of 30*s.* per acre, rates, tithes, &c. included, will prove that the hon. gentleman is still in his

In some instances 1 lb. only, out of 13 of prepared flax-stalks, was obtained, which is three times more waste than is now made in scutching properly-prepared flax at Trimmingham. Besides, the flax in question was grown by amateurs in 1842. As amateurs, too, they sent it to North Walsham, where by novices it was reduced to tow; and then, contrary to the principles upon which the Norfolk Flax Society was formed, they were compelled, alas! to pay even for the waste of their own property. No wonder, then, that Mr. Rous should exclaim, "Indeed I have no proof of its having been profitable in a single instance." Cases of profit, however, are recorded. I select two; one by the hon. gentleman himself, in his letter of the 6th of December, addressed "to the Noblemen, Clergy, Gentry, Yeomanry, and others interested in the prosperity of the county of Norfolk;" and re-published in my pamphlet entitled 'Reasons for the Cultivation of Flax, or a voice for the Poor;' where he observes, "I may as well state, that Mr. Atkinson of Bacton threshed out at the rate of six coombs two bushels of seed per acre, and that he has been offered forty shillings per cwt. for the straw when slightly prepared."

The other, by Mr. Gower, in a letter to an agriculturist in the Western part of Norfolk, of which the following is a verbatim extract.

"I have no doubt of flax being a paying crop. I grew four acres, part for seed, and part for the fibre. I had five coombs of seed per acre off the whole, and was bid 35*l.* for the fibre after I threshed the seed; it cost about 5*s.* per coomb to thresh, and 1*l.* per acre for pulling it up. I am certain it will answer for the seed alone, as five coombs of seed will raise more beef, and more manure in quality, than any acre of turnips we ever grew."

Herein is a marvellous account of flax and seed grown within a few fields of Mr. Rous's crop, which, after allowing for seed rent, tillage, &c., the extravagant charge of 25*s.* for pulling and threshing, and only 30*s.* per coomb for the linseed obtained, leaves a clear profit of 10*l.* 5*s.* per acre, exceeding that gentleman's "ample profit" by 1*l.* 1*s.* per acre; which, observe, is exclusive of the factor's profit. A marvellous account! Mr.

Gower belongs to the Committee of the Norfolk Flax Society, of which Mr. Rous is the president.

I here lay down my pen with honour, for volumes could not afford stronger evidence to prove that where flax is grown for seed, the fibre will make a profitable return for "labour and cost." Nor could volumes more clearly acquit me of having indulged in "idle visions" to "deceive the public."

I remain, Sir, your obedient servant,

JOHN WARNES, jun.

Trimingham, January 14th, 1844.

No. X.

SIR,

It is with no common feelings of regret that I find myself compelled to devote a portion of the present number to the refutation of Mr. Gower's letter, that appeared in your paper of January 27; a letter that I should have considered totally unworthy of notice in times less alarming than the present. But, knowing how prompt the Anti-Corn Law League is to lay hold of, and to disseminate, anything that may be turned to the destruction of the farmer, I am bound to pronounce it as a most inconsistent and fallacious document.

In vain would be the remonstrances of the tenant, the protestations of the landlord, and the exertions of protective associations to stem the torrent of free trade, if Mr. Gower's monster-calculations are suffered to remain unexplained.

Whether the net profit upon an acre of prepared flax, according to the Hon. Mr. Rous's account, amounts to 9*l.* 4*s.* or to 5*l.* 11*s.* per acre for unprepared flax, according to Mr. Gower's account; or whether the seed is worth 25*s.*, 30*s.*, or 40*s.* per comb, are questions of minor importance to the public, seeing that the crop ensures, at all events, an abundance of employment to the labourer, and a profitable return to the grower. Thus much even Mr. Gower himself has established without the aid of a "College education." Indeed, he has proved, beyond dispu-

tation, all, or more than, I ever promised. For, on referring to my 'Suggestions,' I find the following passage :—

“The value of linseed per acre, exclusive of the flax, would probably not amount to more than that of barley; flax included, it would be worth as much as wheat.”

I am aware that my publications have rendered me highly responsible to my country. It is therefore with much satisfaction that I can refer to them for support against the attacks of prejudice or malignity. In all essential points my statements have been borne out by corroborative evidence, by the results of successful experiment, and by assurances on every hand, first, that compound is now so generally used to fatten cattle as materially to lessen the demand for, and consequently to reduce the price of, oil-cake :—Secondly, that the crops of linseed are superior both as respects quality and quantity to those of any part of the world :—Thirdly, that in every instance where the value of the fibre, grown in 1843, has been ascertained, a satisfactory profit has been realised—satisfactory, because it is but reasonable to expect that in future years the cost of management and preparation will be reduced to that of Somersetshire, where the hand-scutching process is performed at 1s. 6d. per dozen, or three-halfpence per pound. Should Mr. Gower be disposed to contradict this statement, I refer him to Mr. T. B. Edmonds, jun., of South Petherton, Somersetshire. A gentleman who wrote to Mr. Rous in the first instance, has since corresponded with me, and will, when required, send men into Norfolk upon the above terms, to dress our flax for market. I exhibited, at the meeting in St. Andrew's Hall, on the 26th of January, a bundle of flax consisting of twelve pounds, tied up in the peculiar fashion of Somersetshire, for which the men are paid 1s. 6d. for scutching. It is said to be well prepared, and may be seen at the Library, St. Andrew's Hall, Norwich, on application to the porter.

An unanswered letter is now before me from Mr. Edmonds, written at the request of a young man twenty-three years of age, the son of an experienced flax-dresser, who is desirous of

undertaking the management of Norfolk flax, "at 2s. per day when not at task-work." He is strongly recommended; but as I do not require his services myself, perhaps Mr. Gower will see it his interest to engage the man, rather than persist in paying 3s. per stone for scutching flax, which, *if properly prepared*, can be readily done for 1s. 9d. or 2s.

The same work can be performed by a scutching-mill at 10d. or 1s. per stone; but even then, we must wait with patience till our labourers have learned the art of using it, before we, or they, can fully reap the benefit. Hence the necessity of an Association to defray the expense of teachers and the support of pupils.

Great is the absurdity of Mr. Gower's endeavour to make the public believe, that the future cost of scutching flax must always be 3s. per stone. Equally so is his attempt to undervalue linseed in general, by estimating his own at only 25s. per coomb.

Presuming that Mr. Gower's linseed, like most samples that I have seen of Norfolk growth, is of first-rate quality, and fit for sowing, I assert, that such seed has long been worth at market 36s. per coomb, and is still rising in price. I think, therefore, that I did not greatly err in valuing it at 30s. for cattle food. Besides, I find that five measures of home grown linseed are equal to six of foreign. At that rate it is used upon my own premises with great success. The best foreign crushing linseed at Lynn is now worth 27s. per coomb, but I take the medium price at 25s. and allow one-sixth for its inferiority as to quality and weight, which makes our own amount to 30s. for crushing purposes; and I am confident that it is cheaper at that rate than foreign linseed, or oil-cake at 6l. per ton.

Last year, Mr. Gower paid 45s. per barrel for three bushels and a half of foreign sowing linseed. Messrs. Mackie and Co., of Norwich, sold English at 10s. 6d. per bushel, and Norfolk growers sold theirs at the same price, amongst whom I believe was Mr. Gower himself.

Mr. Demann, the Belgian, has again been an importer. Many sacks of Norfolk seed are already bespoken, and will shortly pass through Mr. Gower's farm on the way to Yar-

mouth, from thence by sea to different parts of the kingdom. I have every reason to think that some thousand acres of flax-seed will be sown this year, a circumstance at which I devoutly rejoice, not because of a paltry triumph over an unprincipled opposition, but because of the benefits which the British farmer and the British labourer will derive through the circulation of those immense sums now sent to foreign countries for flax, linseed, oil, and cake.

From reports laid before the Board of Agriculture many years since, and other documents on the cultivation of flax, intrusted to me by Lord Hastings, I perceive that half a guinea per bushel was a common price for sowing seed, and not unfrequently 14s. Extracts from those writings in the form of a pamphlet will shortly be published, at his Lordship's desire, for general circulation, when some remarkable facts, confirmatory of my oft-repeated statements relative to the value, utility, and advantages of the flax crop will appear.

Mr. Gower observes, "It is but just to state that the crop of 1843 was cultivated under Mr. Warnes's almost daily direction."

This I utterly deny.—Trimingham is distant about twelve miles from Dilham—a place that I have scarcely seen half a dozen times during the past fifteen years. Mr. Gower adds, "he sent the seed, the man, and drill;—it stood until Mr. W. said it was 'nice and brown;' then it was spread on the land, and afterwards turned with a long stick, and ultimately, when it had been exposed to the sun and weather as long as he directed, it was stacked; but not till it had been so injured by such treatment that it was worth little or nothing." I certainly had the pleasure of sending a man, drill, and seed to several persons in the neighbourhood of Dilham, who were anxious to try the experiment. To all I afforded the best information in my power; nor am I aware that any of their crops were injured through my interference; certainly not Mr. Gower's. But I can confidently aver, that after the seed had been thrashed, the stalks were stacked, and so improperly thatched, that the rain penetrated the sheaves in every direction and rotted many; they were then sent to North Walsham to be prepared. I refer to Mr. Demann.

How astonishing that Mr. Gower should have been so ill advised as to rest his attempted refutation of No. 9 upon materials so unsound! I say attempted, because in no respect has he grappled with the arguments I adduced, or disproved a single assertion that I ventured to make. Nor is his "want of a college education" to be admitted as an excuse for the perversion of my declaration that "9*l.* 17*s.* 6*d.* an acre net profit, is 9*l.* 10*s.* more than has been realized upon average farms in Norfolk during the last seven years." Had the elucidation of truth been the *only* object, his task would have been comparatively easy. The intricacy, however, occasioned by an attempt to overthrow the value of the flax-crop, brought upon him the painful consciousness of a want of those logical and rhetorical acquirements which college men are expected to possess.

When a counsellor has the good fortune to plead the cause of innocence, his task is both easy and agreeable. But when guilt requires his aid, he is compelled to resort to well-arranged premises, acute reasoning, and clever quibbles, to blind the eyes of the jury, in which he is too often successful. Hence Mr. Gower's dilemma; for, wanting the above panoply, he was constrained to cover the profits of his flax with an abundance of straw. And, in order to swell the profits of his grain beyond his flax crop, he resorted to the extraordinary expedient of valuing at 3*l.* per acre the straw, that forms no part of a farmer's direct return. Had Mr. Gower properly defined the only account to which straw could be turned, and the net profit from each separate crop of wheat, barley, oats, turnips, grass, and hay, and added them together, I affirm, that the average profits would appear to be not only *nine* times but *nineteen times* less than the profits of an acre of flax at 9*l.* 17*s.* 6*d.*

I made no exclusive comparison between a "crop of flax and a crop of corn," as Mr. Gower insinuates, but clearly referred to the *acreable profit* of a whole farm, which will be seen in the following extract:—

"Ample profit, because 9*l.* 17*s.* 6*d.* an acre net profit is 9*l.* 10*s.* more than has been realized upon average farms in

Norfolk during the last seven years, if not upon the best; ample profit, because the grower ought to be content with the same return for flax that he obtains for other crops; ample, because of the indirect advantages which my pen would fail me to enumerate."

I repeat my firm conviction, that ten shillings per acre net profit is more than has been realised upon the average farms in Norfolk during the past seven years. On the contrary, Mr. Gower informs the public, that his profits are 8*l.* 2*s.* 3*d.* per acre for oats, 7*l.* 9*s.* 3*d.* for wheat, and 3*l.* for straw. Or, in other words, 1500*l.* per year for corn, and 750*l.* for straw from one moiety of his farm consisting of 500 acres; an account which, however fabulous, will doubtless be promulgated with avidity by the Anti-Corn-Law League as a confirmation of Mr. Rous's recent comparisons on the same subject. Indeed, I should not be at all surprised to learn, that the following placard was handed about the streets of all manufacturing towns:—

“Extraordinary profits of Norfolk farmers,—

1500*l.* for Corn.

750*l.* for Straw.

“Grand Total 2250 Pounds sterling, net profit from 250 acres of land at Dilham.

“The truth, the whole truth, and nothing but the truth.”

Let it not be supposed that I treat this subject with levity. The above calculation was suggested to me by a practical farmer, who, with many intelligent agriculturists in this and other counties, warrants me in declaring, that he has not added a shilling to his capital by farming during the past seven years. They all consider that Mr. Gower's mistakes are fraught with dangerous consequences; and that it will be in vain to oppose the rage for free trade if Norfolk farmers exaggerate their profits. Mr. Gower occupies 500 acres of first-rate land, to the superior cultivation of which I can cheerfully testify. It is hoped that he will favour the public with a clear debtor and creditor report from his farm-accounts, in order that it

may be fully ascertained,—1st, whether his profits on oats and wheat are fifteen pounds, or fifteen pence per acre; 2dly, whether any material value can be attached to the straw beyond its use as litter for cattle, and as a vehicle for conveying manure to the fields; 3dly, whether any reasonable reduction of rent would really enable him to live as well with wheat at 4s. as at 8s. per bushel. Upon this 4s. and 8s. question I shall not at present animadvert. But as agriculture has long been subjected to a species of high treason on the one hand, and a secret conspiracy on the other, I warn Mr. Gower against being inveigled into the opinion, that land rent-free would enable the British farmer to subsist with wheat at 4s. per bushel. Even under the present protective duties, I am convinced that agriculture is doomed to a struggle more severe than it has yet encountered, and that nothing short of increased production will enable us to withstand the contest.

With these views I promulgated—in pamphlets, previous letters, and the present series—plans that, wherever adopted, have been found efficacious. How ungenerous, then, for Mr. Gower to combine with others in thwarting the dissemination of benefits which, through my labours, he has been long enjoying, and which cost him nothing to obtain!

Christianity enjoys the diffusion of those blessings that we possess ourselves. How narrow, then, the policy that would confine within the limits of a locality the advantages which a nation must derive from the cultivation of the inestimable flax-plant! “Inestimable, because the fibre is convertible to the most useful, as well as the most costly articles of wearing apparel; inestimable, because it affords more employment than any other production of the earth; inestimable, because of the seed, which produces a valuable oil, a superior cake to fatten bullocks, and forms the principal ingredient of the incomparable cattle-compound.”

The Hon. Mr. Rous has shown that a profit of 9*l.* has been obtained from an acre of flax, after a full allowance for rent, tillage, &c., besides 10*l.* for labour in preparing the fibre for market. Mr. Gower shows a profit of 5*l.* 11*s.* for seed and unprepared flax; which flax is now, I understand, “being worked out” at a corresponding rate of expense. I take these

two cases, on account of their publicity, to prove the immeasurable advantages that must accrue from the employment of the people, whether the profits, in future, be one or nine pounds per acre. Immeasurable, because I am convinced that had all the flax grown last year in this part of Norfolk been prepared for scutching, it would have afforded employment, during the winter months, for more able-bodied men than are now confined in the overflowing workhouses of the North and South Erpingham Unions.

And here I cannot forbear referring to the admirable address of Robert Copeman, Esq., of Aylsham, that appeared in your paper of last week, respecting the lamentable state of Buxton workhouse, and the desirableness of finding employment for the poor; an address which will be received with interest from the known ability of that gentleman, and I trust will be the means of stirring up the philanthropy of the neighbourhood to carry out his humane propositions.

It is, as Mr. Copeman observes, "Unquestionably much better to keep men employed, even if not in very productive labour, than to support them in idleness." Hence the necessity of cultivating, in every parish, small proportions of flax, the various ramifications of which would provide employment for the able-bodied labourer during the cessation of other work; and for the juvenile population throughout the year. Thus would the necessity for enlarging old workhouses, or building new ones, be obviated, and the burden of such establishments be mainly removed.

Were about two acres out of every hundred of cultivated land sown with linseed in the latter part of March or the first week in April, the crop would, in most seasons, be secured in time to sow the land with turnips; herein no loss could accrue to the farmer, while an invaluable benefit would be conferred on the community at large. For, as 'Idleness is at the root of all evil, so is employment at the root of all moral, civil, and religious order.'

I am, your obedient servant,

JOHN WARNES, JUN.

Trimingham, Feb. 6th, 1844.

No. XI.

SIR,

THE extraordinary manœuvre to which Mr. Gower has resorted to avert the force of my strictures, shows how unwilling he is to quit the field, though defeated at every turn.

As a last resource, my persevering opponent sent a despatch across the German Ocean to obtain a foreign ally—an ally too from a “Flax Commission House, at Ghent,” whose interests are intimately connected with the overthrow of the flax cause in Great Britain; an ally, upon whose bare assertion, that he never said one of my fields of flax was worth 25*l.* per acre, Mr. Gower would persuade the world that I ought to be convicted of falsehood; an ally, who has the effrontery to assert that he scarcely ever saw “badder crops,” in opposition to men of experience who said they never saw better; an ally, who has also the impudence to declare, that his sudden departure from England hindered him from contradicting my statement, although he could easily have done so while on a visit a few days after at his “esteemed” friend’s house at Dilham. Nor did young Van Imschoot depart so suddenly as he would have us believe: for he remained in Norfolk several weeks afterwards, located in the old workhouse at North Walsham, within six miles of Trimmingham. Mr. Editor, you are doubtless aware that human nature is encompassed with many infirmities, of which conceit is not the least. Those who are better acquainted with Mr. Gower than I am, are astonished that this prominent defect should have led him to suppose that “Norfolk farmers and the British public” would place any reliance upon his imported evidence from the Flax Commission House at Ghent; a house that is engaged, with others, in sending “five millions’ worth of flax every year to Great Britain.”

That young Imschoot, in reply to my question, said 25*l.*, I positively aver. But whether he did or not is a question unimportant to the agriculturists of Norfolk, and to the British public. But the accuracy of the report contained in the letter of the Hon. Mr. Rous, President of the Norfolk Flax Society, written at the suggestion of Mr. Atlee, the secretary, and of Mr.

Gower, the officiating member of the committee, is of real importance; because in that report a clear profit of 4*l.* 9*s.* from an acre of flax, independent of the seed, is proved.

Did this party possess the power of a Roman Triumvirate, they could not have issued a proclamation to which the British farmer would have paid greater deference, nor one that could have more absolutely confirmed the success of my original projects, published in the 'Suggestions,' viz., 1st, The Fattening of Cattle upon Native Produce. — 2ndly, The Growth of Flax for the sake of the seed as a substitute for Foreign Oil Cake. — 3rdly, The cultivation of that prolific plant with reference principally to the value of the fibre.

Completely as my views have been verified, and much as I have cause to congratulate my country on the prospect of profitable employment being found for the population, I am nevertheless bound to observe, that the return furnished to Mr. Rous, and to which the hon. gentleman affixed his name, is a document to which he will, one day, refer with regret.

If the letter signed W. R. Rous may be considered as a proclamation of the value of a flax crop; so may that, issued under the signature of George Gower, be regarded as an edict prohibiting the public from placing any confidence in me. I say under the signature, because it is evident that the composition emanated, not from his own, but from the pen of a latent antagonist, evincing a servility on the one hand, and a cowardice on the other.

Undoubtedly the arguments contained in Nos. IX. and X. of my series ought to have been refuted, or the impossibility of so doing candidly acknowledged.

Seeing, then, that in the place of argument abuse has been substituted, I calmly submit to the fate of a prophet in his own country; a fate that I anticipated when writing the preface to my Reasons for the cultivation of Flax; wherein I observed that "Popularity was, at best, an uncertain privilege," and of which the following extract is, alas! a lively illustration taken from the public journals, and addressed to the "Noblemen, Clergy, Gentry, Yeomanry, and others interested in the prosperity of the county of Norfolk."

“ MY LORDS AND GENTLEMEN,

“ I earnestly beg your attendance at the meeting on the 16th. You will then have an opportunity of hearing from that energetic and excellent gentleman, Mr. Warnes, who has spared neither time, nor labour, nor money, in making himself master of the subject, a full account of the mode of growing flax in Ireland, a clear exposition of our own prospects, if we adopt its culture, and much other interesting information on the subject.

“ I have the honour to be, &c.,

“ W. R. Rous.”

“ *Worstead House, December 16th.*”

The question may be asked, what has Mr. Warnes done to forfeit the esteem of his once ardent supporter? I answer, nothing, but adhere to an uncompromising determination to carry out the original designs of the Norfolk Flax Society. Finding it impossible to do this in conjunction with the Committee of Management, I withdrew, and continued to act independently, under a conviction of my Providential call to the work. Hence the defeat of the combined attempt to thwart my individual exertions, to defame my reputation, and to render nugatory the immeasurable benefits to be derived from the cultivation, preparation, and manufacture of the flax plant. I sincerely regret that self-defence compels me to advert to the above topics, and to the perversion of a term in my reply to Mr. Rous's letter that had no reference whatsoever to the paltry evidence obtained from Ghent.

The mystery to which I alluded centred partly in a private correspondence that passed between the Hon. Mr. Rous and myself, in which Mr. Gower's conduct forms a prominent feature. Time and circumstances may unravel the mystery “ earlier, probably, than was anticipated,” and disclose a treachery and ingratitude that have not often been surpassed.

I have reviewed the former numbers of my series with much care, and it is no small satisfaction, to find that I shall not have to erase a single sentence. They will, therefore when

complete, re-appear in the form of a pamphlet, according to my original intention. To which will be added the present correspondence, as a record of the extraordinary and inexplicable opposition to which my advocacy of a great cause has been subjected; an opposition that cannot be too severely deprecated, on account of the stubborn and senseless determination evinced to underrate the future value of the flax crop, by overrating the cost of preparation.

In my last castigation, I showed Mr. Gower, that instead of three shillings, flax could be readily scutched at one shilling and ninepence per stone. I then made a slight mistake, for the same work can be performed at much less money, as will be seen in the following brief extract from a very gratifying letter addressed to me by the gentleman to whom I alluded in No. X:—

“*South Petherton, February 15th, 1844.*”

“DEAR SIR,

“I have noticed your movements in the public papers, which, I trust, will be successfully consummated. With respect to the misunderstanding between yourself and Mr. Gower, relative to scutching flax, I believe in a former letter that I stated the expense to be 1s. 6d. per dozen. I had reference to times when the price of flax and wages was higher. This season we get it worked at 1s. per dozen generally, but my own being very long, I am giving 1s. 2d. with two pints of cider daily. The three men I sent to Mr. Bates have only 1s. 2d. without liquor, and they earn 10s. per week or even more.

“Mr. Bates intends cultivating about 12 acres this spring. He had an idea of paying you a visit. I perceive that flax is about to be grown in Oxfordshire.

“I am, Sir, yours truly,

“T. B. EDMONDS, jun.”

“*To John Warnes, Jun., Esq.*”

I intend to take with me to the meeting on Saturday, speci-

mens of the above-named gentleman's flax, which I confidently anticipate will revive the drooping spirits of the Norfolk Flax Society; also some of my own, which I think will prove to the association that Mr. Gower's attempt to convict me of an intentional mis-statement is unfounded, and unwarrantable.

I am, Sir, yours obediently,

JOHN WARNES, jun.

Trimingham, February 20th, 1844.

No. XII.

SIR,

THE realization of those benefits which I ventured to predict at the commencement of this series, is every day being acknowledged. And I confidently anticipate that, at no very distant date, my advocacy of the above topics will attain a glorious consummation.

Peculiar circumstances and prejudices will always arise in every community to mar the progress of good; and though a man should argue with the "tongue of angels," he would fail to allay them. All my attempts to advance the interests of agriculture through the cultivation of flax, &c., have been attended by the above inconveniences, and obstructed by barriers, which the force of truth alone enabled me to surmount.

It is to the reflective, generous, and patriotic mind that my writings are especially addressed; and I rejoice to find that in almost every part of the kingdom they excite deep interest, and obtain fresh converts to the cause. Associations to promote the growth of flax have been established; and others are in progress of being formed. Writers of no mean authority are enlisting in the service, whose public and private letters are daily being forwarded to me.

As a lively illustration of the above remarks, Mr. Brown, of Trimingham, has already forwarded 167 bushels of sowing seed

of *native growth* to Oxfordshire, Sussex, Essex, and other counties. Vast quantities have been disposed of from other sources: and I learn, from several parties, that the result of their experiments upon a small scale last year will induce them to sow five, six, or ten acres this spring.

With respect to the flax-stalks of last year's growth, I have the infinite gratification of stating, that my father and Mr. Clover have offered the gratuitous use of extensive and appropriate premises, steeping-places, drying-grounds, mill, kiln, &c. &c., at Aylsham; in order that the adjacent crops may be properly prepared, their real value ascertained, and the proceeds returned to the growers. Similar facilities will be afforded in other parts of the Eastern Division of the county; also by the West Norfolk Branch of the National Flax and Agricultural Improvement Association. The East Suffolk Branch likewise carries out vigorously the designs of the Parent Society. Mr. Brown, from Norfolk, has been engaged, and is now travelling through that part of the county, to afford instruction relative to the proper preparation of the soil, to the sowing of the seed, and to the box-feeding and summer-grazing system.

It is intended to locate experienced workmen at the various establishments, where active young men will be taught the necessary arts of steeping, grassing, scutching, &c. &c., and thus a number of well-taught hands can quickly be dispersed throughout the kingdom for the future management of the fibre. I trust that this brief outline of our proceedings will remove all doubts as to the future disposal of this part of the crop.

With respect to the seed, which I must think is of greater importance to the "farmer and the grazier," I now, in the most unequivocal and unqualified manner, repeat what I have so often advanced, that the cultivation of the plant for the sake of the linseed will amply remunerate. I no longer assert this as a matter of opinion, but as a matter of fact, substantiated by the produce of many growers last year. I am induced to express myself thus strongly in consequence of the injudicious remarks contained in our Norfolk agricultural report for the

present month. The writer observes, "This, in all probability, may be accounted for from the circumstance that the cattle-compound is gradually obtaining an ascendancy over oil-cake in the grazing department, in the manufacture of which beans are found to be the cheapest and most useful ingredient, linseed perhaps excepted. The cultivation of flax was first taken up to supply the latter, and even if it should eventually turn out that flax cannot be grown with profit, except for the fibre, a great point will still be gained by using a portion at least of the produce of our own soil in the shape of what is commonly called artificial cattle-food, although we may have to resort to the foreigner for the other portion. We would say to every farmer and grazier, purchase your linseed and supply yourself with what more may be necessary for the manufacture of compound—the proportion is one stone of linseed to four stones weight of bean-meal; thus you will retain eighty per cent. of the amount hitherto expended for oil-cake to circulate and re-produce wealth among yourselves, instead of transferring it to the pockets of the foreigner."

The above advice lays the axe at once to the root of all my exertions for the British farmer. In justice to him, I am bound to avert a stroke so fatal to his interests. That my attempt will prove successful there can be no doubt, because profit and common sense declare in my favour. I have already shown in my former writings, that unless a strict regard is paid to the seed, flax cannot be extensively or profitably cultivated in this country.

By far the greater quantity of imported flax is that from which the seed has been saved, and is, from all that I can learn, the most profitable to the grower. My object has always been to direct public attention to this particular quality, and not to those peculiarly fine descriptions, suited alone to garden culture, and to hands long accustomed to the arts of preparation. My desire is to introduce into our fields this double crop, the most remunerative part of which to the "farmer and the grazier," I again repeat is the seed. It is true, that the finest flax will obtain double the price per ton of the inferior sorts, but it must be remembered that more land is required to produce it—that it incurs an infinity of trouble and expense, and

what is still worse, returns nothing to the soil. Besides, if all were to grow first-rate flax, the price would become lower than that of the coarser sorts, and we should be placed in a predicament similar to that of Ireland for the want of the latter article last year, as the following passage from my pamphlet, entitled, 'Extracts from Ancient and Modern Writers on the Flax Crop,' will show; page 13: "It was announced, that actually coarse flax, for spinning low numbers, was now so difficult to be obtained here, in consequence of the improvement of the quality of the crop this season in Ireland, that the Belfast spinners were importing largely from the Baltic, and that four cargoes had arrived at our quays since the 10th instant. The gentleman who stated this circumstance observed, that he had been obliged to send his son to Dundee, to purchase the supply of the article in question required by him."

With regard to the cattle-compound, unquestionably its superiority centres in the linseed meal. Upon this point I never before heard a doubt surmised. Four years have now elapsed since its discovery, during which time, innumerable experiments have been made and published, of which Mr. Postle's will ever stand the foremost.

Thousands of sheep and bullocks have been, and thousands are now being, fattened upon linseed, formed into compound, in many parts of the kingdom. Under these circumstances, the doubt expressed in your agricultural report is to me an inexplicable, though at the same time an amusing, anomaly.

Without the use of linseed, the attempt profitably to fatten cattle upon grain or pulse, would be unavailing. I speak from the result of varied experiments, during the progress of which I ascertained that it was of little consequence with what ingredients compounds are made, provided a due proportion of linseed be not omitted. For instance, since last July, instead of corn, I have used an extra quantity of linseed meal, which being intimately incorporated with turnips reduced to a pulp, and with ordinary hay cut short, forms a compound, or rather a mass, that I find equally efficacious and less expensive; the description and effects of which are clearly stated in the eighth number of this series.

To lay down any general rule for making compound would

be to destroy one of the greatest advantages that the system possesses over oil-cake, and which I have explained in the 'Suggestions.' A compound formed of four parts of properly prepared beans, to one only of linseed, would, at the present weight, quality, and price of each, cost about 50s. per ton; with the addition of potatoes, something less. Peas, according to my own experience, are superior to beans. Potatoes, on many accounts, especially on that of economy, are preferable to either. In fact, from repeated trial, observation, and report, I am strongly in favour of the potato compound invented by Mr. Cubitt, of Witton. But every grazier must consult his own convenience. Experience alone will convince him, that whether hay, peas or potatoes, beans or barley are employed, the office of all mainly consists in conveying linseed to the stomach of the animal, and that a great error would be committed by a parsimonious use of that potent ingredient, which like the philosopher's stone turns everything into gold. Besides, a liberal proportion of linseed will always ensure the ascendancy over foreign oil-cake; and a quick return, the mainspring of all trade, will animate the hitherto tardy operations of the farmer and of the grazier.

My advice is, provide yourselves by all means from the resources of your farms, with whatever is necessary to form the cattle-compound; with beans, peas, and potatoes where the land is suitable to those crops, but especially with linseed, which, observe, will flourish upon soils where none of the others can be advantageously cultivated. That flax impoverishes the soil is a mere vulgar notion, devoid of all truth. The best historical relations, and the verbal accounts of honest ingenuous planters, concur in declaring it to be a vain prejudice, unsupported by any authority; and that these crops really meliorate and improve the soil. Again, as Mr. Smith, of Chibneys, observes, "With respect to the course of crops, to make the most advantage of clayey land, flax should be your first crop; but this, I know by experience, many, nay, I may say all, landlords will argue against; but I have had the pleasure, by experience, to convince them that they are wrong; for by sowing flax, and that being well attended to, your land is excellently prepared for wheat, your tenant

has in the flax an excellent manure for his latter-math, upon which his flax is laid; he has a rich supply of seed to feed all his cattle; he has abundance of labour for the poor; and at last has, from a good crop, from ten to fifteen pounds per acre to put into his purse to enable him to be a good tenant, and to give both land and landlord every satisfaction required."

That the above statements are, in the main, correct, there can be no doubt. I have grown flax for three years in various fields without perceiving any deterioration of soil or exhausting effect. On the contrary, I considered the land improved by the change of rotation, and by the effect of the crop on after tillage. Nor has a complaint of this kind been made by any one who grew flax *for the sake of the seed* in 1842. Fifty-six acres were, that year, grown in different parts of Norfolk; and nearly all who then tried the experiment upon a small scale, increased it last year, when about 400 acres were grown.

Now, Mr. Editor, when we consider the uncertainty of the turnip crop on the one hand, and, on the other, that there are thousands of acres that will not produce turnips under any circumstances, surely the appropriation of such lands to the production of linseed must confer a lasting benefit not only upon the tenant and the landlord, but also upon the kingdom at large.

I am, your obedient servant,

JOHN WARNES, JUN.

Trimingham, March 29th, 1844.

No. XIII.

SIR,

THROUGH the kind attention of a gentleman in West Norfolk, the Bury Post of the 12th ult. was put into my hands, containing the report of the West Suffolk Agricultural Association meeting. My friend is a native of that part of Suffolk, and was anxious that I should be offered an opportunity of acknowledging the high compliment paid me on that occasion,

and of correcting the statements of the Rev. D. Gwilt, and of Mr. Gower, in particular, respecting the cultivation of Flax.

I return my cordial thanks to the president, Capt. Heigham, and to the members assembled, for their kind opinion of my services to those two great classes of the community, British farmers and British labourers, through which all our wants are supplied, and to support which I shall not cease to toil, though clogged on the one hand by a selfish and idle prejudice, and on the other by a misanthropic opposition.

I regret my absence from the meeting, because I could have afforded that information which Mr. Gower so studiously withheld, and which, as Hon. Sec. to the National Flax and Agricultural Improvement Association, I am constrained to supply. Otherwise I should consider it unnecessary to animadvert upon his incongruous statements, because they clearly prove, if further proof were needed, the soundness of my advice to grow flax for the sake of the seed as well as for the fibre.

Mr. Gower observed, "I am satisfied that if a man tried to grow both at one time he would fail in both." But shortly afterwards he informed the company, that "his land last year produced seed and forty stone of flax per acre." Now as the price for which an article is sold is no criterion of profit, so five shillings per stone, the price offered for Mr. Gower's flax, is no criterion of the acreable profit of his crop; which profit was, in fact, the real object of inquiry, and should therefore have been laid before the meeting. In Mr. Gower's former public, as well as private communications, he declared that he "had no doubt of flax being a paying crop,—that he grew four acres, part for the seed and part for the fibre,—that he had five coombs of seed per acre off the whole, and that he was bid 35*l.* for the fibre after he had taken the seed." But as the seed from each crop was not thrashed separately, it is impossible to ascertain how much the portion of land appropriated to the growth of the seed, produced above that for the fibre. From many returns before me, varying from 14 even to 32 bushels per acre, I calculate about 6 bushels. This would give 26 bushels per acre, which at Mr. Gower's own and low estimate of the value of the seed, at 6*s.* 3*d.* per bushel, would amount

to 8*l.* 5*s.*, or 40 stone of flax included, at 5*s.* per stone, to 18*l.* 5*s.* per acre, independent of the chaff, tow, and broken stalks, which may be set against the straw of other crops.

How strange the anomaly that involves this perplexing question, "How is a man to grow linseed without flax?" and Mr. Gower's assertion, that "If a man tried to grow both at one time he would fail in both!" To solve these problems is beyond my power. But I have authority from Mr. Robert Atkinson, of Walcot, to state, that he grew last year, upon an acre of land, instead of turnips, and without manure, 6 coombs 3 bushels of linseed, and 2 tons 6 cwt. of coarse and fine flax-stalks. The seed he disposed of at 6*s.* 6*d.* per bushel, and the stalks at 2*l.* per ton, amounting altogether to 13*l.* 7*s.* 6*d.*, exclusive of chaff.

It appears that one ton of stalks, after being steeped and prepared for scutching, will be reduced to nearly half its original weight; from which half, about one-fourth only of marketable flax is generally obtained. So that Mr. Atkinson's crop will yield 46 stone of flax, independent of tow, &c., and realize, at 5*s.* per stone, and at 6*s.* 6*d.* per bushel for the seed, 20*l.* 5*s.* per acre. This crop is now being worked out upon Mr. Brown's premises at Trimmingham, at 1*s.* 9*d.* per stone for scutching, and 3*d.* per stone for breaking; affording 8*s.* per day to four men, 1*s.* 9*d.* to two women, and 1*s.* to two girls. My father had six pecks of linseed sown upon a little less than an acre of land, from which he obtained 4 coombs 2 bushels of excellent seed; 37 stone 7 lbs. of fine and coarse flax; 16 stone 13 lbs. of tow; about 12 sacks of chaff; and 119 stone of broken stalks; the whole of which is estimated at 18*l.* 5*s.* The seed and chaff were consumed upon the farm; but the flax, tow, &c., remain for the inspection of any party who may feel disposed to make further inquiry.

Mr. Deman, of North Walsham, the Belgian flax factor, gives from 20 pence to 2*s.* per stone for scutching, and Mr. Brown pays 2*s.*; of which circumstances, I am credibly assured, Mr. Gower was not ignorant. Justice, therefore, required that he should have qualified the statements of his own experience by a candid relation of his neighbours' also, and not have left an erroneous impression on the meeting that flax

must fail to remunerate, because the process of hand-scutching could not be performed for less than 3s. per stone.

I shall not, on the present occasion, attempt to combat Mr. Gower's peculiar notion, that flax pulled in a green state will weigh one-third more than if allowed to arrive at maturity; but I cannot so briefly glide over the "very striking instance" he adduced of the exhausting effect of the crop; because the flax to which he refers was no other than that grown by the Hon. W. R. Rous, at Worstead; and which, according to the detailed account published by that gentleman, realized a clear profit of 97. per acre, after deducting rent, tithe, rates, tillage, manure, seed, steeping, &c., and also scutching at 3s. per stone. The crop was abundant, averaging from three to four feet in length. Some of the stalks, that exceeded four feet four inches, I had the pleasure of exhibiting at the Council of the Royal Agricultural Society, and at the Derby meeting.

Under these circumstances it is only reasonable to suppose that the soil was, in some measure, exhausted. But supposition is not proof, and therefore Mr. Gower ought not to have asserted that "So exhausting was it to the land, that fourteen loads of manure per acre were put on the land where it was pulled off," till the effect had been absolutely tested by a succeeding crop. The result would, probably, have been in favour of the produce after flax, rather than after mangold grown in the same field. Undoubtedly fourteen loads of manure were applied to the land, but for a purpose far different from that adduced by Mr. Gower. The truth is simple, and easily explained. Mr. Rous was desirous of sowing turnip seed immediately after the flax, and of securing two crops in the same year. Manure was therefore resorted to, and turnips obtained of so excellent a quality, that samples were exhibited at the North Walsham Root Show, and the circumstance of their having been grown after flax in the same year published in the Report of the Farmers' Club, by the Secretary, Mr. Gower himself. The land in question was sown with linseed on the 2nd of April, 1843, and the account of this interesting experiment first conveyed to the public through the 'Norwich Mercury,' of which the following is a copy:—

	£	s.	d.
Rent, tithe, and rates	2	0	0
Two winter ploughings	0	12	0
Spring farrowing down, ploughing, sowing, and bushing	0	11	0
One thousand gallons of liquid manure	0	15	0
Three bushels of seed	1	0	0
Weeding and pulling crop	1	2	0
Steeping, drying, and retying, &c.	1	0	0
Scutching 54 stone of flax at 3s. per stone	8	2	0
	<hr/>		
	£15	2	0
Value of the crop—54 stone of flax, at 9s. per stone	£24	6	0
	<hr/>		
Balance	£9	4	0
	<hr/>		

It was afterwards discovered that four stone of flax had been omitted, and that five stone of tow, ten bushels of seed, a quantity of chaff, and about a ton of broken stalks, ought to have been added, in order to render the report complete; also, the after-crop of turnips, as the rent, rates, and tithe were charged to the flax-crop. Without the aid of a very close scrutiny, it will be seen that several pounds might be placed to the acknowledged profit of 9*l.* 4*s.*, and that a sum clear of all expenses was realized greatly exceeding the profit from any other crop. Considering the number of hands employed, and that from ten to twelve pounds or more were distributed amongst the poor in wages, I think it will be allowed that a candid and clear relation of these facts, with which Mr. Gower was so well acquainted, would have been more edifying to the meeting, and more creditable to himself, than the awful history of the application of fourteen loads of manure to the worn-out soil. The company would then have perceived that the cultivation of flax opens a door for the profitable employment of British capital,—for the advancement of the Agriculture and home commerce of the United Kingdom, and for the removal of those grievances to which the labouring classes have so long been subjected.

With respect to the Rev. D. Gwilt's remarks on my controversial letters, I have only to observe, that I attempted not

to expose the substitution of the Gold of Pleasure for flax, till called upon by many influential parties who were desirous of ascertaining whether the glowing accounts of the "new flax-seed" might be implicitly relied upon. Some, indeed, previous to their application to me, hastened to purchase the seed of a plant that, "ere long, was to take that place in the agricultural world, to which by its high merits it was so justly entitled;" and that, "when the price of corn was very low and cheerless, would never fail to produce gold with pleasure and abundance;" a plant, they were further told, that "was providentially sent to assist the farmer in a lucky moment."

My first letter on 'the Gold of Pleasure versus Linseed' appeared in the *Farmers' Journal* of the 26th Dec. 1843, in which I briefly recounted my experience as a grower of the *Camelina sativa*, and my conviction of its utter worthlessness in comparison to the inestimable flax-plant. I also subjoined the following passage from Sir James Smith's *English Flora*, Vol. iii., page 164:—"The ridiculous pompous English name seems a satire on the articles of which it is composed, as yielding nothing but disappointment." To the Editor I observed, and now repeat, that "It was far from my object unnecessarily to expose individuals to ridicule, because, intermixed with artful and designing men were many who, from want of experience of those things which they advocate, unintentionally lead the anxious inquirer into the adoption of fruitless schemes. To this number, your correspondent, Mr. Gwilt, appears to belong; for in his letter of the 14th inst. he observes, 'a little more experience, I confidently predict, will prove the Gold of Pleasure to be *superior* to flax, in the opinion of the practical agriculturist.'" So far, therefore, from bringing any *accusation* against Mr. Gwilt, I exonerated him from all intentional participation in the fraud that was being practised of palming upon the public, as superior to flax, a noxious weed, the stalks of which were as destitute of fibre as the straw of wheat or of peas. I say fraud, because the original promoters, according to their own account of 40 to 50 bushels of seed per acre, and to the charge of four shillings per pound, aimed at the exorbitant profit of 560*l.* per acre. It is true, the price was afterwards reduced to eighteen pence per pound—the fibrous properties of the plant

disowned, and the cultivation recommended mainly for the sake of the oil; but, knowing that the expiring lamp of agriculture required a restorative more enduring than the Gold of Pleasure, I continued to enforce the cultivation of flax as the surer source from which the British Farmer might draw employment for his labourers, food for his cattle, and manure for his land.

In consequence, some hundreds of acres have been sown in various parts of the kingdom: and the experiments have proved that even the most ordinary soils produced linseed in abundance. It appears that, in the present year, a still greater breadth of land has been appropriated to this important plant. The seed formed into compound with grain or pulse, or incorporated with hay, straw, or grass, has been found superior to any other food for fattening cattle. It is now extensively used, and said to be the cause of the present low price of foreign oil-cake. Many eminent graziers have relinquished the old, in favour of the new system of fattening cattle upon native produce, which, with the additional advantages of box-feeding and summer grazing, is being rapidly adopted; advantages that include economy of food and straw, expeditious and profitable grazing, and a supply of manure more cheap and efficacious than can be obtained through any other source. Inexperience relative to the management of the fibre has been the chief hindrance to a more extensive growth of flax. This difficulty, however, is fast being removed; for Belgian and Irish instructors have been introduced, and some of our men are already becoming expert in the steeping, scutching, and handling processes. Under a multitude of disadvantages, many acres of flax have been prepared; principally by Mr. Deman at North Walsham, who, we may reasonably suppose, would relinquish the business, were it unconnected with profit. The coarse description of flax appears likely to supersede hemp for the manufacture of many articles; particularly of fishing-nets. Experiments were made, last year, upon a limited scale; these are now much enlarged, and offer a prospect to fishermen of purchasing their twine and cordage at one-fourth less than the present price. The providing, therefore, of coarse flax as a substitute for foreign hemp, and of linseed as a substitute

for foreign oil-cake, ought to be as much the care of the farmer as the providing of the nation with corn. Seeing, then, that the immense sums annually sent out of the country for the purchase of hemp and cake, tend to enrich the foreign, at the expense of the British farmer, and to employ the foreign, instead of the English labourer; and seeing that flax does not lessen, but increase the produce of corn,—no argument of weight can be brought against its cultivation. But I ought to observe that the soil and climate of Great Britain are more congenial to the growth of fine than of coarse flax; for, a crop of the latter can scarcely be produced without a large proportion of the former, which, when selected, is worth more per stone, and is prepared for the finest purposes.

The Belgians are particularly careful and expert in sorting flax. Their plan is being adopted in Norfolk; and some of the flax thus secured has been spun into yarn by women and children, and manufactured into linen, stockings, and gloves at Norwich, North Walsham, Lowestoff, and other places. But it appears, from communications with which I have lately been favoured, that discoveries have been made, by which “Flax grown in Somersetshire, of a dark, foxy, and bad colour, that cost 35*l.* per ton delivered at Leeds, was so improved as to be rendered in colour and fineness nearly equal to the celebrated Courtrai flax.” My correspondent kindly forwarded a specimen, and informed me, at the same time, that, “From various experiments made in English, Irish, French, and the Baltic flax, he would soon convince me that if we could only grow flax in this country, it would be prepared in a manner that will make yarn equal to that obtained from foreign flax.” In due time, the process referred to will, I doubt not, be made public. I merely allude to it, on the present occasion, as corroborative of arguments and experience in favour of the *double crop*. All my calculations will be found, in the main, correct; and it is with satisfaction that I can refer the reader to my pamphlets and letters published during the past four years. I trust I have now shown that flax, under experienced management, must be highly remunerative—that the grower, in sacrificing the seed, would lose the chief benefit of the crop—and that the contrary opinions upon this subject are futile. I trust, also, I have

shown that the Gold of Pleasure, in comparison of flax, is worthless. But, lest I should be thought to lean too much to my own opinion, I subjoin the published letter of Messrs. Gibbs, the eminent seedsmen in London :—

To the Editor of the Farmers' Journal.

SIR,

In your valuable paper of the 1st inst. we had the pleasure of reading Mr. Warnes's letter on the *Myagium sativum*, or Gold of Pleasure; and having grown it largely for a trial some years ago, can confidently corroborate what he has stated. Not content with our own trial only, we presented some seed to the Rev. Mr. Gwilt, about eight years ago, and had fancied until lately that his opinion of its merits agreed with our own. A gentleman called upon and offered us the agency of his seed, and we then told him the fair result of our own experiments. We might add that the field we grew it on was a sand, at our place in Bedfordshire. We had a good return in straw and seed. The former was used as litter for pigs, and the latter, at least the greatest portion, was rotted for manure.

Your most obedient servants,

THOMAS GIBBS and CO., Seedsmen.

Corner of Half Moon Street, Piccadilly,

Jan. 13th, 1844.

I had intended to offer, or rather to renew, a few observations on the indirect advantages arising from the cultivation of flax; but I have already trespassed too much upon your columns. I will, however, briefly advert to the depressed state of the labour market, the real cause of failure in all other markets, and the origin of those nocturnal calamities so frequently referred to in both Houses of Parliament. Amongst the various schemes that have been tried, and propositions made for the renovation of this market, the national adoption of flax culture alone offers the prospect of success; because, involved in it is the retention of nine or ten millions a year now expended in the foreign market, for the purchase of the fibre, seed, oil, and cake.

In the preparation of these articles, the cost for labour cannot be less than one moiety, or perhaps two-thirds of the whole amount. An overwhelming consideration!!! And when it is remembered, also, that the circulation of these millions at home in the culture of the plant and preparation of the fibre would find employment for the redundant population of this country, and render the payment of rates nominal, the subject demands the most serious investigation. Should it be inquired upon what I found my calculations, I reply, upon 750,000 acres of flax that are annually imported for the use of our spinning-mills, and upon the amount of wages at the rate only of six pounds per acre. Under the supposition that the number of acres may be doubted, I refer to the 56,000 barrels of foreign linseed, containing seven bushels each, sold in Ireland this year, and calculating the number of acres sown with this, and with native seed, at two bushels per acre, it will be found that a breadth of land, exceeding 200,000 acres, has been appropriated to flax. Last year 112,000 acres were given in the county of Ulster alone. Now, in the most favourable seasons 200,000 acres would not produce half the supply required for the Irish mills. We may therefore easily perceive that 750,000 acres of flax fall much beneath the quantity required by the English, Irish, and Scotch spinners. In Norfolk, last year, between four and five hundred acres of flax were grown; affording employment to many, particularly to the more inefficient and juvenile population, who would, otherwise, have remained in destitution and idleness. The beneficial effects arising from the various flax operations in progress at Trimmingham and other places are daily seen, effects that undoubtedly tend to promote the moral and social interests of the parties employed: and when it is considered that three or four thousand pounds must be circulated in the shape of wages before the crops referred to can be brought to market, it is evident that were the culture proportionably extended to every part of the kingdom, similar results would follow, and the universal benefits conferred surpass calculation. I therefore venture to repeat that the subject demands the most serious investigation, and in order to facilitate the inquiry I confidently direct public attention to the operations of the East Suffolk Flax Association, because the

crops in that part of the country, being under the management of an active and intelligent Belgian, a more valuable description of flax will be brought to market than any yet produced in this country, and a stimulus, I am persuaded, will be given to that extended cultivation of the inestimable flax plant, which I have so long advocated as the only means of meeting the wants of an unemployed population.

I am, Sir,

JOHN WARNES, JUN.

Trimingham, Norfolk, July 3rd, 1844.

No. XIV.

SIR,

IT will be remembered by the readers of this series that I have ever invited inquiry, and promised answers to any reasonable objections against my plans for the advancement of agriculture, and for the employment of the population.

Amongst my earliest and most preserving opponents was the *Manchester Guardian*, an organ of the Anti-Corn-Law League. Through this quarter my movements have been watched, garbled accounts of my proceedings published, and the cause which I advocate misrepresented; a cause that, nevertheless, is surely, though slowly, advancing; and, when properly understood and supported, will inevitably render nugatory the ungenerous opposition of the League. Daily experience justifies this opinion; and I desire to inform the working classes of Manchester, and of every other manufacturing town, as I have already informed the operatives of Norwich, that my exertions are directed to the obtaining for them, not only an abundant supply of cheap bread, but of cheap meat also.

The League would have them believe that I aim at a high price for wheat, and at lessening the means of subsistence; as will be seen by the following article that appeared in the *Manchester Guardian* of the 9th instant; an article in itself only

important as it affords me the opportunity of clearly explaining the real nature and extent of my undertaking.

“Flax a Puzzler!”

“The duty on foreign flax is one penny per cwt. A cwt. of good flax is worth about 43s., which is the average price of the quarter of wheat in Lincolnshire for the last week. Wheat enjoys the protection of 20s. a quarter at this moment, which is 240 times more than the *ad valorem* duty on flax; and the question may be fairly asked of the farmer, ‘Do you find this protection reach you in the shape of extra profit upon your wheat as compared to your flax?’ This inquiry is answered by our old acquaintance, Mr. Warnes, of Norfolk, who, we see, has been paying an agitating visit into Sussex, to stimulate the farmers to grow flax instead of wheat; and Sir Charles Burrell, under whose auspices he appeared at the Arundel and Bramtree Agricultural Meeting, is urgent in recommending his tenants to enter upon the cultivation of this unprotected article. The wheat-growing farmers in Sussex, as Mr. Ellman informs us, are in a distressed plight: let us see if we can draw an argument or two for their instruction from the remedy prescribed for the cure of the ills by Mr. Warnes and Sir Charles Burrell. The *protectionists* (as they facetiously call themselves) tell the farmers that the unprofitable price of wheat is caused by the importations from abroad. Now, the whole of the foreign wheat and wheaten flour entered for home consumption this year amounts to about 750,000 quarters, or less than a tenth part of the whole consumption. During the same time 800,000 cwts. of foreign flax have been imported, or more than a third part of the whole consumption. Again, we are told that the English farmer cannot compete with the serf-labour in Russia. Yet it is a notorious fact, that a great portion of the flax is imported from Russia. Then Sir Robert Peel tells us, that the English farmer has heavy burdens, such as poor rates and highway rates, to bear; to which Lord John Russell has added county rates; but are not all these borne by the flax-grower, as well as by the cultivator of wheat? The National Debt of the country, we are told, prevents the English farmer from competing with foreigners; but does the

tax-collector pass by the door of the flax-grower? The Duke of Richmond assures us that the Corn Law is for the protection of the labourers; does the peasant who ploughs, sows, and harrows in the wheat-field earn higher wages than his neighbour who works for Mr. Warnes in rearing flax?

“Your answer, my Lord Duke!

“The League.”

The inquirer was doubtless aware that the Duke of Richmond would not undertake to answer his questions; and it is evident that they were put by one who understood neither the real bearing of the subject, nor how adverse the discussion would prove to a free trade in corn. To me, the task of replying to these questions more properly belongs. But the writer has himself answered the first by asserting that I advised the farmers of Sussex to grow flax instead of wheat; than which nothing can be further from the truth. Nor can he point out an instance in which I ever advocated the substitution of flax for wheat. It is a fact worthy of observation, that the best flax is produced after wheat, and that the finest crops of wheat will follow flax. So that, upon soils such as I inspected in Sussex, I had no doubt but that, under judicious management, two crops of wheat and one of flax might be grown in three years. With this impression I advised the agriculturists of Sussex to grow flax upon small portions of those lands that would otherwise lie fallow, as a far more profitable preparation for wheat.

The experiments of Sir Charles Burrell proved that the soil of his part of the country was congenial to the growth of the plant; and that cattle, fattened in summer upon the seed, amply repaid, without regard to the value of the fibre; facts in themselves too convincing to require any very “urgent” recommendation to follow the Hon. Baronet’s example.

With respect to the extraordinary comparison between a quarter of wheat and a cwt. of flax, I must refer to the eminent spinners of Leeds to decide, whether flax of a fine quality, that alone could with any propriety be compared to good wheat, can be purchased at less than about double

the sum of 43s. per cwt. At all events, I never sold any, even for the coarsest purposes, for so little money as 43s. per cwt.

As a protectionist myself, I assert that the unprofitable price of wheat, and the profitable price of flax to the British grower, are, at the present time, both occasioned by importation. This apparent anomaly may be easily explained.

It will be seen that the arguments of the above article (if they may be called such) resolve themselves into the two following questions:—

1st. How can the English grower afford to sell flax for the same price at which the foreigner imports it free of duty, at less cost for labour, and unburdened by a national debt, poor, highway, and county rates?

2nd. Why cannot the English grower afford to sell wheat for the same price at which the foreigner imports it free of duty?

I answer, that the quantity of flax grown in this country is so much beneath the demand, that the foreign farmer or speculator, knowing our necessities, is able to charge so high a price that the British grower can readily accept the terms, although burdened with all those disadvantages from which the foreigner is exempt.

Formerly, the superiority preponderated in favour of British flax; but, during the war, government removed the restrictive duties. The foreigner then quickly inundated us with flax, obtained the ascendancy, exercised ever after an arbitrary control over the flax-market, and compelled our manufacturers to pay for the raw material, not "about 43s. only," but about 140s. per cwt.; or, instead of 43*l.* per ton, 140*l.*: while the Belgian farmers, in particular, realized from 30*l.* to 50*l.* per acre for what they significantly term their "golden crop." A serious warning of what may be expected when the duty on foreign wheat shall be a penny per quarter!!

It will now appear evident to the most common understanding, that, should we become as dependent upon foreign nations for bread as we now are for flax, English wheat must inevitably share the fate of English flax. Land would be thrown out of cultivation; the foreigner obtain the command of price; and

the few growers of wheat, like the few growers of flax, would alone reap a profit.

It will be perceived that my reply to the first question embodies that of the second. Short indeed is the explanation required to show the impossibility of our contending against the farmers of foreign countries, even under the present protective duties: for, as surely as they now rule the flax market, so will they ultimately the wheat market also.

Sixty years ago the Belgians were an insignificant people. Now, through their flax dealings with us they have become rich and powerful. Imitating their example, our continental neighbours are rapidly improving their agriculture. They employ agents to traverse our best cultivated districts for the purpose of acquiring information, and of purchasing our machines, cattle, &c.; and, unless we meet the approaching danger by securing profit through increased production, the tenant farmer will discover too late, that land, though divested of all the burdens to which the Manchester Guardian refers, could not avert his ruin.

I now wish to observe, that, when speaking of "cheap bread," I mean not the price of wheat per quarter, but the acreable profit to the grower; and that by "cheap meat," I mean, not the price per pound of beef or mutton, but the profit obtained through the increased number of fat cattle sent to market. I cannot better enforce this part of my subject than by subjoining an extract from the seventh number of this series, which the League, though they claim me for an "old acquaintance," had not the courage to circulate amongst their deluded followers:—

"An apprehension has been expressed, that my object in introducing the cultivation of flax was to supersede that of corn, to raise the price of provisions, and lessen the means of subsistence; hence the loudly expressed alarm, 'We cannot eat flax.' It certainly might appear to the superficial reasoner that the appropriation of land to the growth of flax would necessarily diminish the supply of wheat. But a careful investigation of the subject will soon disperse this fear. It will be discovered, that the best flax is grown upon wheat stubble; that, upon strong soils in particular, flax is an excellent crop to precede

wheat,—that as flax will flourish on newly broken-up soils, it will evidently be the means of bringing into regular cultivation large tracts of barren land; that it will require less than two acres to every hundred now in cultivation, to supply the present demand for flax, independent of foreign aid, from which infinitely more tons of linseed would be obtained to fatten cattle than were ever imported of oil-cake in one year; that throughout my pamphlets, previous letters, and present series, published during the past four years, I advocate *constant work, at adequate wages*; and not only cheap bread, but also cheap meat for the people. Showing, from the result of successful experiments, that, through the cultivation of flax, the fattening of cattle upon native produce, box-feeding, and summer-grazing, three bullocks and three sheep may be fattened where only one of each was kept before;—and that it did not require a very profound calculation to discover that a triple quantity of manure thus obtained would produce a corresponding increase in the productions of the earth, the price of which is immaterial to the farmer, provided he is remunerated, as is oftener the case with a plentiful crop and a low price than with a scanty one and a high price. I rejoice that measures are being adopted for a vigorous extension of the above system through every part of the kingdom. Already much progress has been made; and I look forward with renewed confidence to no very distant date, when the manufacturer shall not have cause to complain that the high price of the common necessaries of life prevents his successful competition with foreign markets. I cannot avoid expressing my surprise that those who profess so much sympathy for the poor, and who depict so truly the horrors consequent on non-employment, should attempt to thwart measures that would at once obtain the desired relief;—should offer their vague and empty theories in opposition to solid and permanent benefits;—rejecting the good within their immediate reach, in order to grapple with phantoms which never fail to elude their grasp;—holding out to starving mortals the blessed prospect that with ‘six shillings a week’ a man is to maintain himself and family, and fare sumptuously upon provisions drawn from foreign resources, to the encouragement of foreign farmers and to the employment of foreign

labourers. To such monstrous propositions mine are diametrically opposed. They have been often recorded, and centre in the desire to advance the rate of wages, to maintain the value of British property, and to preserve that proud position in the scale of nations which we have so long enjoyed; recognising to the fullest extent that portion of British property which the poor man alone possesses—viz., his labour.”

In fine, Mr. Editor, the two primary objects which the promoters of the cultivation of flax have in view are, to find employment for the people by the preparation of the fibre, and food for cattle through the use of the seed. The direct profit upon a few acres of flax, abstractedly considered, is unimportant. But the indirect advantages arising from an employed population are incalculable.

If the circulation of a few extra millions in the shape of wages can be considered a benefit, then does the flax crop hold forth the glorious prospect of securing a greater amount of labour than any other production of the earth; securing, because, when once fairly introduced, it must become permanent: and not only would agriculture experience a stimulus, but commerce also; for we should become *real* instead of *nominal* exporters of linen: and the home consumption of provisions and of every description of manufactured goods would be proportionally increased. I say *nominal* exporters, because we are now obliged first to import the raw material, before we export it in the form of linen.

Undoubtedly the spinning and weaving of flax are branches of business highly beneficial; but, were it grown and prepared at home, our national advantages would be much more than doubled.

That the proprietors of our great spinning-mills desire to promote the home cultivation, is evident; for the Messrs. Marshall and Co., of Leeds, were amongst my earliest instigators to perseverance. And, as a further confirmation, I need only refer to the circumstance of the Messrs. Mulholland, of Belfast, having withdrawn no less a sum than 40,000*l.* a year from the purchase of foreign in favour of Irish flax.

Of one fact we may rest assured, viz., that the Spinners of

Great Britain are anxious to circulate those millions at home which they now send abroad; and, when it is considered that the major part of those millions would be paid in wages to the weaker and juvenile population, who can but foresee the beneficial effects upon the habits and morals of the people?!! Thousands would be preserved from early crime,—parish rates present a decrease in proportion to the money circulated—property be rendered secure,—and pauperism, the disgrace of our land, be displaced by liberty and independence. Then who would not urge the experiment upon agriculturists? and who but the League would charge landowners with a desire to increase the distresses of the people?!!

The readers of agricultural reports must be struck with the general expression of sympathy for the labourer, and with the impossibility of obtaining a universal and permanent improvement of his condition. Experiments are suggested, but, with the exception of allotments, all appear impracticable. Land can indeed be appropriated to the poor; but from my own observation I fear that the system, as far as the regular farm labourer is concerned, will disappoint its charitable promoters. Strictly speaking, the husbandman has but very few leisure hours. When *his daily labour is performed*, the renovating effect of rest is required to prepare him for the continuation of his duties to his employer. This the allotment system does not recognise. Were its advocates to calculate the number of hours that a poor man would require properly to cultivate a rood of land, I am persuaded that they would be less ardent in their expectation of conferring a material benefit upon him.

No compensation can be offered for constant work at adequate wages. But an extended cultivation of flax would provide an abundance of work, and wages would follow as a natural consequence.

At the close of the last session of Parliament Lord John Russell gave notice of his intention, at the commencement of the following session, to propose measures for securing to the labourer "A fair day's wages for a fair day's work." Without doubt his lordship has bestowed much attention upon this important subject. But, so long as the labour-market remains overstocked, I greatly apprehend that his laudable exertions

will be unavailing. Should the Hon. Member for London be induced, by the perusal of this letter, to institute further inquiries into those plans which I advocate for providing employment through the cultivation of flax, the fattening of cattle upon native produce, &c. &c., he will discover that they are eminently calculated to aid his humane designs ; that, under the improved management, flax, by the preservation of the seed, is become a double crop—that the seed itself amply repays—and that whatever the fibre produces above the cost for labour, is gain.

I remain, &c.,

JOHN WARNES, JUN.

Trimingham, Norfolk, October 24, 1844.

P.S.—I shall have the pleasure of forwarding, for insertion in your next week's paper, No. XV. of this series, as a reply to several applications from various parts of the kingdom, affected by the drought, for information respecting the most economical method of keeping cattle through the forthcoming winter.

No. XV.

SIR,

In offering to the public the 15th number of my series, I cannot avoid expressing some apprehension that comparatively few of the thousands who may read it will be induced to follow the advice therein contained ; because many of my correspondents and visitors assure me that no sooner do they intimate an intention of adopting my plans than they become objects of ridicule in their respective neighbourhoods. Such indeed was my own fate, when specimens of the cattle-compound were first exhibited to the North Walsham Farmers' Club. Supported, however, by profit, the most powerful of all allies, I obtained the victory ; and now thousands under the same banner proclaim to the agricultural world that native produce is preferable to foreign. Until this fundamental principle is fully recognised by a systematic rejection of foreign, in favour

of native productions, agriculture and home-commerce can never flourish. The prevailing distress is attributed to those legislative enactments which have rendered hopeless the farmer's attempt to realize a fair profit upon his capital employed. Although the justice of this opinion must be acknowledged; yet, with the present protective duties, and the united determination of the agricultural body to render the soil subservient to their wants, utter ruin may be averted. The finger of an all-bountiful Providence points to that soil as congenial to the growth of all the necessaries and many of the luxuries of life. Our fruitful fields and splendid factories evince the superiority of our tillage, our arts, and our sciences. Yet, under the specious pretext of cheap food, we find that the manufacturing interests are raging after low-priced foreign corn; and the agricultural, after low-priced wares of every description; each party being regardless of the misery around them, and, at the same time, blind to their own welfare. For instance, let foreign flour be offered at only *1d.* per stone less than that made from English wheat, and *our own produce* is driven from the market. Or, let the vender of foreign manufactures but offer them at a trifle less than those made at home, and the preference is immediately given to the former. Thus the two great bodies of the community, the agricultural and commercial, flock to the cheapest market, falsely so called: no reciprocity of interests, nor regard to the claims of an unemployed population, being recognised by either; and thus the labourer who works in the field, and the operative in the city, are sacrificed.

However great the tide of our exported manufactures may appear, the streams of home-commerce are, in fact, infinitely greater. These, flowing through the kingdom in every direction, would soon swell into rivers, provided the working classes received wages adequate to their services. Through them all native productions are raised; they, also, are the source of our gains, and comprise the main body of consumers. In proportion as the working classes are paid does money flow from the country to the town, and from the town to the country, to the incalculable benefit of both. If agriculture and home-commerce be the main pillars of national prosperity,

how mistaken must be the policy that aims at reducing the value of British property to a level with that of foreign states, and the rate of wages to that of the serf-labour of Russia. Seldom was there a period when the farmer flourished, but the tradesman and the labourer participated in his success; and seldom were the times adverse to agriculture, but that trade and labour were involved in the depression.

Enumerated in the catalogue of expenses upon land are several millions a year for foreign oil-cake, foreign manures, and poor's-rates; all of which, I contend, may be obliterated by appropriating to the growth of flax not more than two acres of land out of every hundred in cultivation. The greatest caviller must see that so small a proportion could not prove a heavy burden, while the good that would accrue to multitudes ought to silence every objection. It is obvious that the cost for labour in making the cake, and in preparing the manure alluded to, is defrayed by English farmers, who are thus placed in the peculiar position of maintaining two populations; one at home, the other abroad—the former appearing in “the catalogue” under the head of “poor's-rates.” Now when it is remembered that 35,000 tons of linseed would be produced more than ever was imported of oil-cake in one year, from the small proportions of land in question—that more herds of cattle could be reared, and fattened by forming the seed so grown into compound—and that a corresponding increase of manure would be thus obtained,—surely I shall be excused for observing, that no farmer ought to complain of the corn-bill and the tariff, who, neglecting the resources of his own, in favour of foreign lands, becomes a free-trade importer of corn and meat in the shape of cake and manure; for corn raised through the aid of foreign manure ought certainly to be regarded as the produce of foreign countries, as much as that which enters our ports through the payment of a regular duty. And when the inferiority of foreign oil-cake is taken into account on the one hand, and the uncertain effects of artificial manures on the other, I trust the time is not far distant when the agriculturists of this country will look back with astonishment upon the millions they have expended in the vain endeavour to acquire wealth through

such means. Again, let it be remembered, that three or four crops are commonly grown in succession from a single dressing of farm-yard manure, while only one can be obtained from an expensive application of chemical fertilizers. Also, that through the contents of the farm-yard, a never-failing crop is produced upon all soils, in most seasons, and under any circumstances; whereas, the good effects, if there be any, of all artificial manures, depend upon soil, upon seasons, and upon circumstances. How united, therefore, and determined ought the agriculturists of Great Britain to be, in adopting systems that will render them independent of foreigners, who are ever prone to offer ungrateful returns for the money lavished upon them, as the following extract from the public prints but too truly confirms:—

“The Belgian Government has just made a serious increase on the duties on British silk and cotton manufactures, and on machinery imported; and at a meeting of German merchants, on the 7th ulto., at Leipsic, a resolution in favour of spinning thread by machinery was passed, which object, it is recommended, should be supported by a more careful and extensive cultivation of flax, an import duty on English thread, and a bounty on the exportation of linen.”

In my last letter I observed, that the Belgians had become “rich and powerful through their dealings with us;” but I might have added, upon their own authority, that, in consequence of those dealings, many villages have swelled into towns, and cottages into mansions, for their flax-factors. I did not then anticipate so speedy an opportunity of exemplifying the truth of that remark, nor of showing how little we have to hope from foreign reciprocity. Any lengthened remarks on the above article are unnecessary, for it must be obvious to every inquiring mind, that the relaxation of our restrictive duties has not been followed by the anticipated results. I will, however, briefly observe, that the merchants of Germany are extensively engaged in furnishing this country with flax at a nominal duty; that they obtain great prices for the article, and take nothing in exchange but British

gold. This flax, spun into thread, they would eject from their markets, by the imposition of "a serious increase of duty," and, in order to consolidate their interests, an indemnity is proposed for the losses occasioned by a competition with our spinners and linen manufacturers. Doubtless, their objects will ultimately be obtained; therefore, the landowners, merchants, manufacturers, and agriculturists of England ought to unite in promoting an extensive and systematic cultivation of flax upon the most improved principles, and thus render themselves for ever independent of German extortion. The establishment of spinning-mills and flax-factories on the Continent must effect a complete revolution in this branch of our trade; for, instead of being supplied with the raw material, flax would be imported in the shape of linen, our manufacturers be thrown out of employment, and thousands be thus added to the already crowded ranks of pauperism. That immediate danger is to be apprehended, I do not venture to predict; but it certainly appears reasonable that a movement fraught with such important consequences should be met by counteracting measures.

Five years of practical inquiry into the cultivation of flax, added to the experience of many growers in Norfolk, Suffolk, and other counties, fully warrant me in asserting that the seed alone has generally exceeded the average value of grain crops. In several instances from twenty to twenty-eight bushels per acre have been grown; and when I refer to Mr. Negus, of Cripplesham, in Norfolk, who obtained thirty-two bushels from one acre, sufficient evidence is, I think, adduced to prove that, under judicious management, proportionate crops may be grown in every part of the kingdom. Those parties who recently applied to me for information respecting the most economical method of keeping stock, will now perceive that had the advice to grow flax, which I have so constantly promulgated, been followed, the necessity of purchasing foreign linseed would have been avoided; their parishes, like Trimingham, been unincumbered with a surplus population; and themselves receiving profitable returns for the employment occasioned through the preparation of the fibre. To afford the required information in clear and comprehensible

terms is the part that I have engaged to perform. It will be the business of the inquirer to put it into practice; and then only will he be brought to believe that results so great can flow from expedients so simple. Had my recommendations emanated from analytical rather than from practical research, the compound been offered at an enormous profit, and its properties blazoned by some eminent City chemist, thousands would have flocked to the shrine of Agricultural nostrums, thousands of pounds been offered as a willing sacrifice, and ten thousand voices engaged in lauding the *Seminum Linorum Compositiones*. The intrinsic merit of the linseed compounds, like every thing else of real advantage to agriculture, centres in simplicity. Those who veil their discoveries in mystery for the sake of gain, or mar their utility by patent rights, too often injure the cause they profess to support, and seldom reap for themselves more than disappointed vanity.

The only apparatus required for the system I recommend is a linseed-crusher, an iron copper, a hand-cup, a stirrer, one or two half-hogsheads, two or three pails, and a wooden rammer. These will cost about 12*l.*; but if proper cylinders were attached to mills, as they now are in the neighbourhood of North Walsham, the machine could be dispensed with, and the outlay reduced to about 2*l.* Large coppers are found inconvenient for stirring when compounds are made with the meal of peas, beans, &c. The sizes most in use contain from thirty to forty gallons. Upon large farms it will be desirable to have two; one smaller than the other. The stirrer is an iron-ribbed spoon fastened to a shaft of wood four feet long, and somewhat less than the handle of a pick. The rammer is three feet long, about five inches square at the bottom, and two and a half at the top, through which a pin fourteen inches long is passed for the convenience of being used with both hands; mine is nothing more than one end of a broken axle of a cart, with a stick thrust through the linch-pin hole. This happened to be at hand when the experiments were first made upon my premises five years ago, and has been in use ever since.



I commenced winter grazing this year upon white turnips, grown after flax, the tops of which, being extremely luxuriant, are cut with pea-straw into chaff, compounded with linseed meal, and given to my bullocks according to the following plan:—Upon every six pails of boiling water, one of finely crushed linseed meal is sprinkled by the hand of one person, while another rapidly stirs it round. In five minutes, the mucilage being formed, a half-hogshead is placed close to the copper, and a bushel of the cut turnip-tops and straw put in. Two or three hand-cupsful of the mucilage are then poured upon it, and stirred in with a common muck-fork. Another bushel of the turnip-tops, chaff, &c., is next added, and two or three cups of the jelly, as before; all of which is then expeditiously stirred and worked together with the fork and rammer. It is afterwards pressed down as firmly as the nature of the mixture will allow with the latter instrument, which completes the first layer. Another bushel of the pea-straw, chaff, &c., is thrown into the tub, the mucilage poured upon it as before, and so on till the copper is emptied. The contents of the tub are lastly smoothed over with a trowel, covered down, and in two or three hours the straw, having absorbed the mucilage, will also, with the turnip-tops, have become partially cooked. The compound is then usually given to the cattle, but sometimes is allowed to remain till cold. The bullocks, however, prefer it warm; but whether hot or cold, they devour it with avidity.

The cost for linseed, according to the above rate of feeding, is 2s. 3d. per week; which seed, though grown upon my own farm, I place to the account of artificial food; and I calculate that in order to obtain the same effect through foreign oil-cake, the expense per week would be at least one moiety more.

It will now be seen that the real fattening properties of the above compound centre in the linseed; and that in order to produce a greater or less effect it is only necessary to regulate the quantity of that important ingredient. Also, that wheat, oat, and barley straw, or bean-stalks, may be used either with



or without turnip-tops, according to circumstances; nothing more being required than fibrous matter to act as a vehicle for conveying linseed to the stomach of the animal, and for re-conveying it to the mouth for rumination. Did time and space permit, I could easily show how food thus prepared acts so much better than if given in a crude state. Experience, however, has long since proved that linseed boiled without being crushed, or given in any way except by intimate incorporation with other ingredients, loses so much of its efficacy as to become an expensive rather than an economical method of feeding cattle. Therefore, in order to render straw of service to *fat*, or yet more so, to *lean* stock, the quantity of linseed meal must be regulated. And, where *cost* is the object of inquiry, I would observe, that one pound, or five farthings' worth, of linseed meal per day, given according to my directions, will be of great advantage to the animals; but if doubled in quantity, the improvement of their condition and efficacy of the manure will repay the extra expense. As a substitute for hay this diet will be found equally useful for cart-horses and colts. Thus far I have afforded the best information I possess for meeting the exigencies consequent on the loss of hay. But where this important crop has been preserved it will, of course, be desirable to mix some with the straw when making the compound.

Unfortunately for the extension of my plans, few really practical agriculturists are disposed to promulgate their own individual success. On this account I refrain from publishing many interesting and profitable cases. I subjoin, however, an extract from the letter of a gentleman in Essex, with whose enlarged and philanthropic views I have long been acquainted, and who will rejoice if the simple relation of his own experience should in any way be rendered serviceable to his country:—

“My flax-crop was pronounced by the Belgian agent, at Ipswich, to be as fine as any he had ever seen. It was nearly four feet high, very thick in the ground, and perfectly free from weeds. The expenses for harvesting my crop were under one pound per acre. I have laid ten acres in a hovel, and

stacked three. For the want of water I was not enabled to steep any; and shall not now make the attempt till the spring. My experiments with compound last year were satisfactory. I am now feeding 14 horses and colts with straw and hay compound. My plan is, to eight bushels of cut hay and eight bushels of wheat-chaff are added 28 lbs. of crushed linseed boiled in eighteen pails of water. I give the horses this quantity at night in the yard. In addition, they have one pint of pea-meal per day, and one hundredweight of straw per week. The boiling linseed is poured upon the chaff, and both are thoroughly mixed together. I intend giving my young stock $1\frac{1}{2}$ lb. of linseed meal with a bushel of chaff daily; my cows the same. I made eight boxes last year; this year I made twelve more. I shall erect seven more in the spring, which will enable me to keep all my cattle in boxes, except horses. Everybody appears pleased with the box-feeding system; and I hope will ultimately be the same with the flax cause. The country appears to be awakened to the necessity of doing something for our now too numerous poor. If you can give me any further information for making straw compound I shall be obliged. I have told you my plan.

“Yours truly,

“JAMES BARKER.

“*Stour Hall, Ramsey, near Harwich,*

October 16th, 1844.”

With reference to the exigencies of the present season, I lately examined the roots, or knotted branches, of the too prolific couch or guetch grass, and am of opinion that if properly cleansed from mould, it would be found of much service. This description of grass is often extricated in large quantities from the soil and burned. But, if it were carefully washed, cattle would eat it with avidity, particularly if compounded with linseed. The experiment is to be tried shortly upon my premises, when the grass in question will be taken out of the land with a fork, washed, cut into chaff, and incorporated with linseed and straw. Perhaps others may be induced to rival my attempt, and to favour the public also with the result of their experience. Nothing ought to be considered too insignificant

for inquiry, because the investigation of apparent trifles has often led to important discoveries.

A bushel of good linseed at 5s. 6d., weighing 48 lbs., if properly formed into compound with three or four times the weight of bean, pea, or ordinary wheat meal, and a little more than double the weight of the whole in water, will cost about 2l. 15s. per ton. The superiority of this economical food to foreign oil-cake is explained by reverting to the fact, that one, at the best is merely the refuse of linseed, while the other is made of the seed itself. The reason why bullocks will fatten upon cooked more than upon raw food, I must leave the chemical farmer to explain; but it is certain that linseed meal, given in a crude state, will scarcely produce half the effect; nor yet if the ingredients were mixed up with cold water, or put into the copper before the water boiled.

My pigs are fattened upon boiled peas, which I find a more economical plan than any other. Sheep also thrive well upon them; and I have no doubt but that cooked beans are equally adapted to pigs and sheep.

Coppers will be found useful appendages to farm premises for more purposes than I have described, and superior to any steam apparatus that I have yet seen; a little management only being required, which will soon be gained by experience.

I must now conclude with the expression of a hope that this letter will prove an acceptable reply to my numerous correspondents, that farmers will take advantage of those inexhaustible resources which Providence has placed at their disposal, and that landlords will co-operate with their tenants, in rendering them subservient to the wants of the long train of dependants, who now call upon them for work in vain.

Should Farmers' Clubs be desirous of bringing these topics more prominently before their respective counties and neighbourhoods, they will ever find me ready to afford them all the assistance in my power.

I am, &c.,

JOHN WARNES, Jun.

P.S.—In your Journal last week, and also in that of the preceding, I observed two letters, one from Mr. W. P. Taunton,

of Ashley, the other from Mr. William Taylor, F.L.S., of Regent Street, London; to both of which I shall offer a reply, through the 16th number of my series, as soon as my numerous engagements will allow. In the mean time, I hope that the subscribers to your paper, who take an interest in the subject of those letters, will preserve them, in order that they may be carefully compared with my reply.

No. XVI.

SIR,

According to my promise I will now proceed to answer the letters of Mr. Taylor, F.L.S., and of Mr. Taunton, of Ashley, which appeared in your Journal of the 28th of October last, and in that of the 4th of the present month.

The latter is a direct attack upon my veracity as an individual, the former upon my character in conjunction with the supporters of the flax cause; for, observes Mr. Taylor, "The bubble scheme of growing linseed or flax in England is unfortunately exploded, and its former warm supporters would now blush to examine the representations with which they have attempted to deceive the public."

I will, however, first endeavour to remove those erroneous impressions which Mr. Taunton has not only imbibed himself, but also desires to implant upon the minds of others; or, why not have applied to me through the medium of a private inquiry in the first instance, instead of allowing his doubts to remain dormant fifteen months before he publicly demanded answers to his ungenerous and uncourteous interrogations? I say ungenerous, because they are accompanied by his own preconceived opinions unsupported by reason or experience! Uncourteous, because that charity which "hopeth and believeth all things," Mr. Taunton withholds from one whose exertions have long been directed to the advancement of his interests, in common with the rest of the community—with what success I could easily give you many testimonials. But on Saturday, the 9th of the present month, in the Corn-

Exchange, at Norwich, more open assurances were expressed than I ever heard before, of the successful adoption of my plans, and of active preparations for the present winter, by the erection of boxes, boiling-houses, &c.

It is somewhat remarkable that the letter No. 3, now treated with so much contempt, is one upon which I bestowed more pains and expense than upon all the others put together. Your readers will remember that it was headed by a representation of the ground-plan and elevation of my cattle-boxes, &c., in order that the subjoined explanation might be rendered more comprehensible. It is also remarkable that this letter appeared in more Journals than any others of the series; that not less than 40,000 copies were circulated; and that no objection ever reached me except the one now under consideration.

My letters not being addressed to the superficial, but to the intelligent and thoughtful reader, I should consider the ebullition now before me unworthy of notice, except for the opportunity it affords of recalling No. 3 to the recollection of the public.

In order to render my replies perfectly comprehensible to the reader, every quotation from Mr. Taunton's letter is given in italics, as follows:—

“ Convinced of the utility of feeding animals in boxes, if such can be erected at the cost which you are said to have mentioned at a public meeting (30s. per box).”

Whether the boxes cost thirty pounds or thirty shillings, their utility is the same, except that the lower-priced have the advantage of being warmer in winter and cooler in summer. At the public meeting referred to, and at others also, convened by advertisement, pattern boxes, erected according to the plan described, and at the cost of thirty shillings each, were exhibited.

“ The four boxes of which, in your frontispiece, you give an elevation, are clearly not a representation of any four boxes delineated

on the ground-plan, but another wholly distinct building; but whether intended for the same, or for others, those four boxes would, in my neighbourhood, cost forty pounds, instead of six."

The four boxes remain precisely in the same state as when sketched for publication, one side resting upon a wall previously built for another purpose. In any neighbourhood, or under any circumstances, the assertion that four *such boxes* would cost forty pounds, is not only absurd, but directly at variance with truth.

"The four boxes, of which you give the elevation, instead of being covered with a roof composed of trimmings of hedges and ditches, are evidently covered with a substantial coat of thatch, which, in this country, where wheat-straw costs 3l. and 3l. 5s. per ton, would alone absorb nearly or quite all the fund of 30s. per box, which you are said to have allotted for the construction of the whole building."

Again Mr. Taunton is at variance with truth; for the roofs in question are composed entirely of trimmings from hedges and ditches, thatched with about as much straw as is generally used for wheat-stacks; the value of which, with the trimmings, I considered ought not to be placed to the account of the boxes; because such insignificant materials must have been consumed upon the farm in some other way much less profitable. The high price of straw around Stockbridge is probably occasioned by the low state of agriculture. Had my plans been adopted on the first appearance of No. 3, straw, in Hampshire, would, by this time, have been far more plentiful and less expensive. A more pitiable description of the mal-appropriation of land I never read, than one contained in a letter from an early correspondent in that country; and I question whether Ashley itself is not in a similar state.

"You assume that on every farm there is a wall of the barn, or other wall, of which advantage may be taken, to build the box in contact with it. But, in every economically built and disposed farmstead, the wall of the barn is already occupied by stables, calf-houses, tool-houses, root-sheds, cart-houses, piggeries, and the like."

I merely observed, that, where an advantage could be taken of an unoccupied wall, the cost of the boxes would not exceed 30s. each; an observation which I now unequivocally repeat. I will pass over Mr. Taunton's description of an "economically built and disposed farmstead," with his anxiety to know how "many poles are required, and what length and thickness," to part one bullock from another, and proceed to touch upon his reiterated complaints.

"It also appears, to my humble apprehension, that much skill and ingenious mechanism, and considerable expense, must be applied to construct cribs that shall move up and down between the posts. How are they to be suspended? And what force is to raise them to, and stay them at, any particular elevation at which it may be desired to place them? and what advantage is gained by their moving up and down, above a crib which should simply stand on the ground?"

No supernatural agency is exercised to regulate the action of the cribs between the posts; nor has much skill, ingenious mechanism, or expense been employed. The great moving power centres in simplicity, which the carpenter would define by the term *rabit*. This is made by nailing a spline perpendicularly in the centre of the outside ends, of the crib, and two others upon each post to receive them, by which means the crib is moved up and down at pleasure; the suspending power being nothing more than two pins thrust through holes in the sides of the splines upon the posts for the crib to rest upon. The necessity for rendering the cribs moveable, arises from the increase of manure in the boxes; a circumstance that Mr. Taunton ought not to have overlooked, and that requires no further explanation.

"The cribs we use in our farm-yards cannot be built, at least, for less than fifteen or nineteen shillings, which, again, would draw another stiff instalment out of the thirty shillings."

The wood for the cribs, if made of foreign deals, would cost only 3s. 9d. each.

"You do not mention of what wood, or of what size, the poles

ought to be, which are to make your sills and ties. I should gladly learn, also, the length which you allot to each beast, from the crib backwards."

The description of wood being perfectly immaterial, and consisting simply of poles, such as the thinning of plantations, I left this department of building to the discretion of the carpenter. The length of the crib backwards is explained by the circumstance of the boxes being $8\frac{1}{2}$ feet square.

"Have you any provision for carrying off and preserving the liquid manure, or is that left to soak into a porous soil, as it will?"

The excellency of my system consists in retaining all the soil in the box, which, being absorbed by the litter, is, after two or three months, removed.

"If there be either iron, brick, or stone channels, and pavement to intercept and conduct it to a reservoir, the poor thirty shillings will not supply these."

My boxes are, in fact, small reservoirs or tanks of themselves, from which no escape is allowed.

"The double gates which are to shut in the cattle, must also be attended with considerable cost."

On the contrary, they are nothing more than common lift-gates, in the shape of doors, according to the appearance of the elevation; and at the cost of about eighteen shillings per dozen.

"Is water given in the same cribs or troughs as the compound?"

Upon the Rev. Blair Warren's premises, at Horkesley Hall, Essex, the cribs have each a partition for water, supplied, I believe, by a pipe running parallel with the boxes; but to my cattle water is given in a pail.

"A more detailed and minute estimate of the materials, expense, and dimensions of the several parts would, doubtless, confer a great kindness on many farmers."

The real cost of the boxes to the tenant, centres in the workman's wages. With the intrinsic value of the materials he has but little to do, because landlords would readily furnish such wood as I describe. But, to the unassisted farmer, posts, ties, and sills would cost about 9d. or 1s. each; and poles for partitions, gates, and roofs, about 2d. or 3d. a piece. With respect to dimensions, I find $8\frac{1}{2}$ feet square, independent of the space for the crib and passage, sufficient for bullocks of 40 or 50 stone weight (of 14 lbs. to the stone). But, for cattle upon a larger scale, a few additional inches might be added; and then one box would, if required, contain two small bullocks, a plan that I have seen adopted with advantage. The following extract from No. 3, re-copied from the *Gardener's Chronicle* of the 9th instant, will, I hope, convince your readers of the pains that I have taken to render this subject easy and comprehensible, and at the same time preclude all further requisitions upon my time and patience, *until the experiment has been fairly tried and found unsuccessful* :—

“The description of these buildings is difficult, because, however clear and explicit, it must convey ideas of magnitude and intricacy, while neither exists. To make ten boxes, a space will be required of 90 feet long and $12\frac{1}{2}$ feet wide, from the side most convenient to the passage. Next let the mould, to the depth of one foot, be excavated from the other part, and thrown on the side intended for the front, and spread to the thickness of a foot deep; this will give two feet from the bottom of the boxes to the surface. A wall of brickwork, four inches wide and two feet high, is next to be built round the inside of the part excavated, and intersected at distances of $8\frac{1}{2}$ feet. At each angle the brickwork should be about 12 inches square, which will both support the posts and afford strength and durability. Upon the wall a sill of wood is to be placed, for which purpose large poles, split or square, are adapted. The foundation being now complete, posts six feet long, and the necessary sills and ties, may be placed upon it. Across the ties the most ordinary poles may be laid to support a roof composed of the trimmings from hedges and ditches, and completed with a thatch of straw or rushes. Two gates

must be added to each box, one of which is to move on hinges, and the other to be secured to the top and bottom sills of the building, so as to be taken down at pleasure. Presuming that advantage has been taken of a barn or other walls on farm premises, the external part is finished. The internal has merely to be parted off with a few poles between each bullock, and the passage separated by the cribs, which are to move up and down between the interior posts which are placed upon the angles of each box, and support the roof on the passage side."

Now, Mr. Editor, I will proceed to animadvert upon Mr. Taylor's comparison between flax and the Gold of Pleasure, contained in your Journal of the 28th of October. In so doing, I must exercise a more than ordinary caution; because an action was brought against me, in consequence of a former attempt to convince the "British Farmer" that no flax could be obtained from the stalks of the *Camilina sativa*, or food, adapted to the fattening of cattle, from the seed.

As, however, my opinion remains unaltered, I will subjoin a copy of my defence, which, I trust, will answer the double purpose of expressing my sentiments of the attempt to under-rate the value of the flax crop, and of protecting myself against a second prosecution: a defence that was exacted by Mr. Taylor's solicitor, and which I wrote under the supposition of its being published in vindication of his client's character.

Trimingham, Feb. 13, 1844.

"Sir,

"I much regret your not having applied to me for an explanation relative to my comments on the Gold of Pleasure, in the first instance, rather than through a solicitor. Most readily would I have given it; and at the same time have exonerated you from any wilful attempt to impose upon the public.

"The subject was first introduced to me by Mr. Haynes, to whom reference is made, in what I presume to be your circular,

which also appeared in the *Farmers' Journal*. From Mr. Haynes I received a polite acknowledgment of his error respecting the use of the seed to fatten cattle, and the stalks to obtain flax. Struck, however, with the extraordinary fecundity of the plant, and supposing that it might be profitably cultivated for other purposes, I determined to give it a fair trial. Accordingly I had two plots of ground, separated merely by the drill, sowed with the seed in question; some of which was taken from amongst my own flax, and some from that of my neighbour.

“When arrived at maturity, one sort proved to be the dwarf *Camelina*, but was certainly not superior to the other in produce. I inclose a sample for your inspection. Some time since, I, in company with an eminent botanist, searched the Public Library and the booksellers' shops at Norwich, for information. I have now before me one of Mr. Haynes's printed circulars; also all the correspondence that appeared in the newspapers, with private letters on the subject. Some of the seed has been substituted for linseed, and placed before two bullocks on my premises, which they totally reject. I have examined the stalks, in which I cannot discover a particle of flax; nor was there any in those that I saw at the Royal Agricultural Society's Rooms, Hanover-square, although they were represented as containing it.

“You acknowledge that ‘The Gold of Pleasure is an annual plant that grows spontaneously over all Europe, and is cultivated in some countries for forage and manure;’ also, through Messrs. Hind and Son, that it can be purchased at 36s. per quarter, which, at 56 lbs. per bushel, is less than a penny per pound; but I can obtain it at 32s. per quarter.

“Under all these circumstances, I cannot withdraw my statements as to the price of the seed known by the name of ‘Gold of Pleasure,’ its applicability to fatten cattle as a substitute for linseed, or its superiority to the flax-plant. But I cordially agree with you as to the productiveness of the seed, and the oil for lamps, &c. The refuse, I consider, might be used with advantage, instead of rape-cake for manure, but not as a substitute for linseed-cake. A moment's reflection will, I think, convince you of this fact; for rape-cake is never given to cattle.

I beg to refer you to Mr. Skirving, of Walton, who sowed last year a variety of the *Camelina sativa*; and to Mr. Gibbs, Piccadilly.

“In conclusion, allow me to observe, that, when last in London, I made an essay to see you, for the purpose of explaining the mistake, which I conceived you had made.

“I now disclaim having included you in that plundering fraternity to whom I alluded. Indeed, my strictures referred to such men only as would sell a single seed for a shilling, and make ten tons of guano out of one, &c., &c. Nor, in alluding to Regent-street, and the Polytechnic, had I any other motive beyond pointing out to the public the liberty taken with my pamphlet, and the disappointment that would be experienced. My constant aim being to advance the interest of agriculture, regardless of all personal and pecuniary considerations, I trust you will acknowledge that I could not have been instigated by any feelings of animosity against yourself, and that the proceedings you have instituted against me are, at all events, premature.

“I remain, Sir, your obedient servant,

“JOHN WARNES, JUN. . .

“*To W. Taylor, Esq., F.L.S.*”

Mr. Taylor, in his letter now under consideration, observes, “I should scorn to disgrace the columns of a journal so useful to agriculturists, by false statements or theoretical ones. On the 16th of March last I planted five acres of the Gold of Pleasure, and two acres of flax side by side; the soil is the same, a rich light loam, in high cultivation: with the Gold of Pleasure, the seed was drilled in, from nine to twelve inches apart, in rows.” He further observes with respect to the flax planted by the side of the Gold of Pleasure, that “It was sown at the same time, on the same kind of soil, and manured and treated in the same manner.”

Mr. Taylor has omitted to state the quantity of seed used; but, from his printed directions for the Gold of Pleasure now before me, I presume ten pounds per acre; and, as the flax was “treated in the same manner,” of course ten pounds only of

linseed per acre were sown; a drop in the ocean compared to the quantity required!! But whether 10 lbs. or 160, the proper proportion for the soil and high condition described, were sown, is immaterial; since the nine and twelve-inch drilled rows sufficiently account for the deficiency on the one hand, and the inferiority of the stalks on the other. That Mr. Taylor, a Fellow of the Linnean Society, an eminent chemist and a botanist, should have so little understood the nature and properties of the inestimable flax-plant, is a striking illustration of the incompetency of chemists to regulate the operations of practical farmers.

Again, Mr. Taylor observes, "The land it was grown upon will take several years to bring it to its original state;" an assertion which, with the soil, manuring, hoeing, and treatment described, is at variance with the experience of flax-growers; and ought, before hazarded, to have been tested by a succeeding crop.

In attempting to prove too much, Mr. Taylor defeated his own aim in the first instance; while, in the second, he is equally unsuccessful; for, as his Gold of Pleasure was harvested in the last week in July, and the land sown with turnips, so was my flax, and the same field is now producing turnips. Mr. Taylor adds, "The Gold of Pleasure may be again sown after the first crop in July;" whereas, another field of my own produced a second crop of flax, which was fed off with horses and sheep, and is now with wheat. And here I think it right to observe, that, three years ago, I sowed about four bushels of flax-seed in the latter end of August, upon two acres of land which had failed with turnips, and obtained an excellent crop of green feed, which was mowed and given to the horses in October and November following. A striking instance of the rapid growth and multitudinous properties of this extraordinary plant!!

Mr. Taylor concludes his letter by informing us, that the "Bubble scheme of growing linseed or flax in England is unfortunately exploded, and that its former warm supporters would now blush to examine the misrepresentations with which they have attempted to deceive the public." The meaning of "*unfortunately*," I do not comprehend; for the sooner all deceptive schemes are frustrated the better. Happily for the

country, the cultivation of flax is supported by many noblemen and gentlemen, who, formed into societies, aim at relieving the distresses of the poor by providing them with employment.

Again, Mr. Taylor errs in accusing the promoters of the flax cause of "misrepresentations to deceive the public;" and displays a wanton hostility to the patriotic motives by which they are actuated—motives which would secure them from shame, even should a failure attend their labours. Those only have cause "to blush" who, in order to advance their private interests, vilify the disinterested exertions of others.

But I will close this controversy with an invitation to Mr. Taylor, Mr. Taunton, and all who desire information "on the cultivation of flax, the fattening of cattle upon native produce, box-feeding and summer grazing," to attend the second Annual Meeting of the National Flax and Agricultural Improvement Association at Ipswich, on Friday, the 6th of December next; when boxes similar to those in question will be exhibited in a field near the town, with cattle fattened on the compound; also, many specimens of native flax, linen, hand-spun yarn, and linseed, in the Temperance Hall. Further arrangements will be made for enabling the Belgian instructor located in the neighbourhood to afford oral and ocular information on the various methods of steeping, grassing, and scutching flax, &c.

A conversational meeting will be held in the Society's Rooms, at the Red Lion Inn, Market Hill, on the evening previous to the exhibition, where I should be delighted to receive all my correspondents who could conveniently attend.

I remain, &c.,

JOHN WARNES, JUN.

Trimingham, Norfolk,

Nov. 22nd, 1844.

P.S.—I yesterday inquired of a carpenter, whose main business consists in making farm-gates, &c., the value of such wood as I described for cattle-boxes. He replied, that he had been employed to make them, and would readily undertake to erect any number at 30s. each. He also observed that

rafters for sills, ties and posts, could be purchased, according to quality and length, at from 6*d.* to 8*d.* per foot, timber measure, that is to say, a post six feet long and six inches square would cost nine-pence or a shilling.

No. XVII.

SIR,

THE season for sowing flax and peas being at hand, the 17th Number of my Series will, I doubt not, obtain a ready insertion in your Journal, as well as in every other professing to advocate the interests of agriculture.

My former letters were unavoidably argumentative and controversial; but as the soundness of my propositions is established beyond dispute, and opposition vanquished, I can add to the present address the charm of brevity. Of ultimate success I have ever felt confident. To the Report of the National Flax and Agricultural Improvement Association I refer with unfeigned satisfaction, as a confirmation of all that I have advanced during the past five years; and as the most important document yet published upon the subject of flax.

I now desire to draw attention to the sowing of flax and peas, because the straw of the latter incorporated with the seed of the former will render the farmer not only independent of foreign resources to fatten his cattle, but mainly, also, of the precarious and expensive turnip-crop.

It will be remembered by those who are conversant with this Series, that my assertions were invariably supported by proof. I will now narrate the result of the system of grazing upon my premises described in No. XV.

Purchased, on the 27th of July last, seven eighteen-months old bullocks, at 6*l.* each, of Mr. Wright, farmer and cattle-dealer, of Great Tudenham, near East Dereham, from which time till October they were fed on grass and lucern cut into chaff, with a small allowance of linseed and grass, or potato compound; flies excluded from the boxes by canvas blinds. From October to the 14th of November the cattle were kept upon a compound of pea-straw, white turnip tops, and linseed, with as many turnips as they could eat besides; afterwards,

Swedes were substituted for white turnips; and instead of the tops, a small quantity were sliced to form the compound. On the 30th of December the two smallest bullocks were sold to Mr. Doughty, butcher, North Walsham, for 24*l.* 10*s.*; and on the 13th of January he purchased three more, at 13*l.* 13*s.* each; leaving the two largest and least fat, which, in the course of three weeks, will be worth 29*l.* It will be seen that the average time was six months for every bullock, and the average sum above the original cost, 7*l.* 10*s.*; or, in other words, realizing 52*l.* 9*s.* in six months, for an outlay of 42*l.*;—a return for native produce such as may fearlessly challenge comparison; and such as ought to stimulate the British farmer to the cultivation of flax, the fattening of cattle upon native produce, box-feeding, and summer grazing.

The rate of expense for linseed was 2*s.* 3*d.* per week for each bullock. With respect to turnips and straw no minute estimate can be formed; but it will be acknowledged that if four acres of pea-straw were consumed in so short a time, by cattle so few in number and so small in size, the quantity of turnips eaten must be very limited.

It is to the grand return for farm produce that I desire to direct public attention, whether in the shape of meat, of corn, or of flax; and not to trifling calculations, that tend to obscure rather than to elucidate truth. I repeat, of flax, for, although my bullocks were fattened upon the seed, the fibre is being sold at 5*s.* and 5*s.* 6*d.* per stone, amounting to four or five pounds per acre, clear of unavoidable expenses, as well as those occasioned by inexperience. Nor must the rich manure be forgotten, the efficacy of which surpasses any derived from other sources.

It may be objected that the case described is a solitary instance of successful grazing, arising from peculiar circumstances. I answer, quite the contrary; for it is only the continuation of a system long adopted at Trimmingham, and which I have repeatedly laid before the public. One difference, however, is observable—viz., that, in former accounts, I described the profits arising from the use of grain, while now I relate those derived from straw; or in other words, I, this year, sold the peas, and gave the straw to the cattle.

The stalks of beans are said, by chemists, to be equal to hay; if so, they are superior to the straw of peas, and may be used instead. On some soils beans will flourish where neither peas nor turnips can repay; but I have never yet seen the land upon which either grew, that would not produce linseed.

In this neighbourhood abundant crops are grown on the worst of soils; for instance, two acres of newly broken-up heath land were sown upon the estate of Robert Marsham, Esq., of Stratton Strawless, and produced about thirty-eight bushels of excellent seed, 75 stone 12 lbs. of good flax, 5 stone of ordinary, and 4 stone of tow, with a considerable quantity of refuse, fit for coarse sacks, ropes, &c. The steward, Mr. Bowman, gave chief part of the linseed to cattle, and sold the remainder at 7*s.* 6*d.* per bushel.

Recently, all the best flax has been disposed of at 5*s.* per stone, and re-sold to Mr. Fisk, twine-spinner, Siderstrand, near Cromer, at 5*s.* 6*d.*, or at the rate of 44*l.* per ton; valuing, therefore, the ordinary flax and tow at half price, and the seed only at 6*s.* 3*d.* per bushel, the crop exceeds 16*l.* per acre. The full account of expenses I have not received, but estimating them at six or seven pounds per acre, a greater amount of profit, clear of rent, &c., was realized, than can now be obtained from wheat upon the finest land.

As flax, therefore, will flourish upon any soils favourable to beans and peas, and as the seed of the former, incorporated with the stalks and straw of the latter, will sustain and fatten cattle, independent of turnips and oil-cake, the policy of sowing such land with flax, beans, and peas, instead of allowing it to be fallow, must be evident. The straw of grain may possibly answer the same purpose.

I am now using a proportion of barley-straw with that of peas, according to the following plan:—To nine or ten pails of water a bushel of Swede turnips, sliced very small, is added; after having boiled a few minutes, about two pecks of linseed meal are actively stirred in: the mucilage is formed in about five minutes. A hogshead is then placed by the copper, and one or two skeys of chaff thrown in. Three or four hand-cups full of jely and turnips are next poured upon it, which being

mixed together with a three-pronged fork, are firmly pressed down with a small rammer three feet long, and five inches square at the bottom, with a cross handle at the top. The first layer completed, a small quantity of the chaff, &c., is put into the tub as before, till the copper is emptied. The mass, being covered down a short time, is ready for use.

It is impossible to say exactly what quantity of linseed a bullock requires, as much depends upon size, the other ingredients intended to form the compound, and the expedition with which the animal is intended to be fattened: observation and experience will be the best guides. At the present season of the year, when scarcely any thing but straw can be had for store-stock, and of that but a limited allowance, a pound of linseed-meal a-day mixed with two or three skeps of chaff as above, will materially advance their condition, promote their health, and increase the efficacy of their manure. Under every consideration, the cultivation of a limited quantity of flax must be attended with profit, without the possibility of loss. New editions of my pamphlets on these important subjects being required, I intend to republish them, with this series in a collected form, when all particulars will be minutely described and illustrated with engravings.

I am, &c.,

JOHN WARNES.

Trimingham, Norfolk,
Jan. 29, 1845.

No. XVIII.

SIR,

IN addressing this letter to the public, through the medium of your Journal, I feel a degree of satisfaction that I am unable to express, because the fruit of my labours are, every day, becoming more and more apparent. A present reward! heightened by the prospect of future and complete success! For why should not those benefits now enjoyed by the village of Trimingham, through the preparation of flax, be

realised by every other parish in the kingdom? And why should not the whole agricultural community reap the same advantage from the use of linseed, that my numerous correspondents are now deriving? Let it suffice, that, notwithstanding the inclemency of the season, the poor of my parish are well employed, with the addition of ten flax-dressers from the adjacent villages; and that no instance of failure has occurred from the substitution of native instead of foreign produce to fatten cattle, where the system I recommended has been strictly adhered to.

That the cultivation of flax and the use of the seed are gradually and surely gaining ground, there can be no doubt; but the distresses of the poor, and the exigencies of the farmer, demand a more rapid promulgation. On these accounts regardless of every private consideration, I desire to be confronted with a public meeting in the metropolis, in order that I may enforce by argument, and prove by ocular demonstration, that the difficulties under which the nation labours through the unemployed population, might be effectually removed.

Evidently, the two main sources of employment arise from the necessity of food on the one hand, and of raiment on the other. It is equally clear, that infinitely greater numbers are required to provide the latter than to secure the former.

Unhappily for the rural population, and for the country at large, attempts are only made to find employment for the able-bodied labourer, through the production of food, while the claims of that far more numerous class, comprised of weaker hands, are disregarded; but were only half the zeal displayed to find employment for that class, through the production of clothing, the market for labour would speedily revive, agriculture assume a different aspect, and the cry for employment cease.

The various grades of labour are submitted to the ordeal of a public market, which can never be considered in a healthy state unless there is a ready demand for the weak as well as the strong; but it is impossible to create such a demand except by the introduction of new sources of employment, and it is impossible to select one more applicable to the case than the cultivation of flax; because the entire management of the

crop, from the pulling of the stalks to their preparation for market, is work peculiarly adapted to the weaker hands. Thus should we transfer to our own population those benefits that involve no less a circulation than two or three millions in the shape of wages, and this, too, amongst that portion of the working classes whose services are not required to till the land.

Some idea may be formed of the direct benefits that would be conferred by the distribution of so much money; but no estimate can be formed of the indirect advantages to trade, to manufactures, and to agriculture—because, as Mr. Burn observes, in his valuable letters on “Population and Emigration”—

“The poor would buy more agricultural produce, thus offering a better market for the farmers. They would also purchase more clothes, thus equally benefiting the manufacturer. Being better fed, they could do more for their employers; and being more constantly occupied, would have less inducement or leisure to commit crimes; and, consequently, be more valuable members of society. They, and all around them, would be happier comparatively, and more contented. The farmer, having a better and more constant market for his produce, could better afford to pay his rent. The manufacturer, having a more constant demand for his goods, could better afford to pay, and keep a larger number of hands constantly employed. The landlord would have less to deduct for poor-rates, and receive, in consequence, a larger income.” * * * * “In our native land every experiment may be safely tried to improve it. Nature points out the course, and it is a violation of her laws to retard it.” This able writer further observes, “Food is wealth. Population is wealth. Since the manna fell from Heaven in the Wilderness, food has been the produce of man’s labour. It invariably follows cultivation, and in sufficient abundance for the wants of men. Some parties then must be encouraged to cultivate the earth; and surely it is obvious policy to pay home-cultivators rather than foreign.”

Mr. Burn’s arguments in favour of providing food from our own resources, are enforced with a solidity of reasoning rarely to be met with. I refer to them because they are equally ap-

plicable to the production of clothing through native rather than foreign cultivators. "Men," he adds, "are not surely condemned to one species of labour that will not maintain a feverish existence, to the exclusion of another that ensures plenty. It is the business of the rich to find out new sources of employment for men at all times willing, and now more than ever anxious, to provide food for themselves and families."

In my former writings I have shown, from Parliamentary Returns, and from other documents, that five or six millions are annually sent out of this country for the purchase of flax, to the encouragement of foreign farmers, and to the employment of foreign labourers.

I have shown that flax is a highly prolific crop, and, under the new system of management, improves the soil; that it affords more varied and permanent occupation than any other production of the earth; and that the most ordinary land in the kingdom is capable of producing it.

I have shown that the appropriation of one acre to every hundred now in cultivation, to the growth of this important plant, would employ the redundant rural and manufacturing population of this country; and produce in one year more than double the weight of seed to fatten cattle, that was ever imported of oil-cake in the same period.

I have also shown that the genius of the people is suited to the management of flax; and the wealthy spinners of England, of Scotland, and of Ireland, are anxious to purchase our crops; and, as a further confirmation, I refer to the first annual report of the National Flax and Agricultural Improvement Association.

The appropriation of land to the growth of flax with the view of finding employment for the poor, must necessarily be increased in parishes where idle hands abound the most. In such, two, or possibly three acres in every hundred would be required, while others might be exempt altogether. Still it would be found that, on the average, were one acre to a hundred sown, the redundant population would not be sufficient to prepare the crops for market; and the supply of flax and linseed would be inadequate to the increasing demands of the manufacturers and graziers of this country.

A wide field, therefore, is open for the employment of British capital, and for the exercise of British skill; which, the inquirer will discover, must be attended with the certainty of gain, without the possibility of loss. For instance, St. Faith's, distant three miles from Norwich, has, for years, been burdened with a population for which no permanent employment could be found. Last year, two or three farmers of that parish grew small quantities of flax, upon which ten or twelve of the most active paupers are, at the present time, being taught the art of hand-scutching, and will soon become expert. This year, all the farmers have agreed to grow flax proportionate to their occupations, in order that the poor may, in future, be offered employment instead of the bread of idleness.

For the same reasonable and benevolent object, Joseph Bulen is now teaching the inmates of the Union Workhouse at Stradbroke, in Suffolk, to dress flax. Thus, attempts are being made to prevent pauperism, and to turn the redundant poor to a profitable account. From these measures no loss can possibly accrue; for the labour of the pauper, and the cost of his maintenance, were lost before. All, therefore, that he produces at market, is gain.

Were it necessary to cultivate waste-lands for the employment of the people, an additional argument might be raised in favour of flax; because the plant will flourish and produce much valuable linseed upon ground newly broken up, as I showed in my last letter. But I now wish to direct attention to soils most ungenial to the growth of turnips, and which would be greatly improved by the cultivation of flax, both as respects the following crops of wheat, and the diffusion of manure from cattle fattened upon the seed.

In the course of my travels, I have seen many thousand acres lying fallow, and imperfectly tilled, mainly through a deficiency of manure. The farmers, being unable to grow turnips, could obtain but little in winter; and, for the want of box-feeding, still less in summer. But were the culture of flax judiciously introduced, with a proportionate quantity of peas or beans, upon the farms to which I allude, and the crops appropriated to rearing and fattening of cattle, manure would be abundant, and the farmer obtain an ample return in the

shape of meat, of butter, and of wool. He would also be placed upon an equality with the best turnip districts in the kingdom, with the advantage of growing greater crops of corn; because, if turnips can accomplish so much for *sand*, doubtless the seed of flax will do more for *clay*.

The value of the stalks beyond that of litter depends upon management; of which, the farmer being ignorant, it would be necessary at first to obtain instructors, when that part of the crop will be found not the least important. My present object is to show that the seed alone remunerates. Common sense stimulated by the claims of an unemployed population, will soon devise the proper method of disposing of the fibre. An intelligent correspondent observes, "I am desirous to afford my tenants and neighbours every information which may tend to improve the system they now pursue, being convinced that it is only by an increase of home produce that farmers can hope to surmount the difficulties under which they are at present labouring."

Similar opinions and sentiments are daily forwarded to me from every part of the kingdom. They are in perfect accordance with my own, but home produce can only be profitably increased from our own resources; and to what expedient can we resort, except to the introduction of a crop that will provide food for our cattle, manure for our land, and employment for our people?

I was present at the dinner of the Agricultural Protective Association in London, and listened with attention to the candid and eloquent, yet powerless, speeches, delivered upon that occasion—powerless, because they contained no proposition for ameliorating the condition of those classes that comprise the great mass of idle hands; a mass, however, for which the League profess much sympathy, and assert that the manufacturers could employ with a free trade in corn—an assertion which, however delusive, carries weight, because the poor, like an invalid at the last extremity, will submit to the nostrums of any quack rather than relinquish hope.

Could Government be induced to retrace its steps with respect to the Canada Bill, the Corn Laws, and the Tariff, even then the population in agricultural districts would be re-

dundant. For although field-labour might be increased, yet, under our present system of farming, it is impossible that the culture of wheat, of barley, and of turnips, should provide employment for the great majority comprised of weaker hands.

But were flax added to the rotation of crops, the landlord and tenant could so regulate the demand for labour as not only to meet the requirements of the rural, but of the surplus manufacturing population also. Five years ago I advanced the same theory. I now venture to enforce it with a confidence resulting from experience.

It will be necessary to form district societies, based upon the principles, and regulated by the rules of the National Flax and Agricultural Improvement Association, by which means information would be disseminated, success ensured, and the defeat of Cobden, with his party, rendered certain.

At the present time the value of flax and linseed is daily rising at market, affording remuneration to the grower, while corn and meat, on the contrary, can only be produced at a ruinous price to the farmer; an argument sufficiently strong in favour of the cultivation of flax and the fattening of cattle upon the seed, independent of all other considerations, and which, I am sure, will induce many of my correspondents at least to try the following experiments:—

Let four or six acres of land, intended for turnips, be equally divided, manured, and treated in every other respect alike; one half to be sown with turnips; the other with linseed and peas, or beans. The result will prove that more animal food and greater fattening properties will be obtained from the average of soils and of seasons than if the whole had been appropriated to turnips, leaving the flax-stalks for purposes above described. The discerning landlord and intelligent tenant, in calculating the risk, will perceive the prospect of gain, without the possibility of loss.

In conclusion, allow me to repeat my readiness to attend any public meeting in London, convened for a thorough investigation of the subject, where agriculturists, experienced and interested in the growth of flax, with parties desirous of purchasing the crops, could be assembled. At the same time model boxes and specimens of the cattle-compound shall be exhi-

bited; also native flax and linseed from almost every variety of soil, compared with foreign samples, in order to prove, incontestibly, that the soil and climate of this country are congenial to the plant, and that its culture must confer incalculable benefits upon every class of the community. The expediency of forming district associations, for limited periods, could then be discussed, and regulations made, according to the subjoined extract from the *National Circular* :—

“ 1st. That the existence of the Society be limited to four years. That auxiliary branches be established throughout the kingdom. That instruction on the most improved mode of husbandry, the cultivation and preparation of flax, the new system of grazing with compound, summer-feeding in boxes, &c., &c., be speedily and effectually disseminated, by the location of experienced labourers for a few months where needed, in exchange for others to be taught on farms from whence those labourers were sent, that while some were communicating others might be receiving instruction; the wages of these men to be paid by their employers, and the cost of their journeys by the Society. That an interchange of visits be promoted between intelligent agriculturists of different counties, and gentlemen of leisure and patriotism, whose services in attending public meetings, and in conferring with interested parties, would be of the utmost importance. That economy, expedition, zeal, and perseverance be the distinguishing features of the Society’s proceedings, and that no expenditure of time or funds upon yearly entertainments, or anything foreign to the direct object, be allowed.”

I am, &c.,

JOHN WARNES, JUN.

Trimingham, Norfolk,

Feb. 19th, 1845.

No. XIX.

SIR,

THE serious reduction of farm produce, and the alarming prospects for the future, render it incumbent on all who are

interested in the management of the soil, to unite in counteracting the impending evil. "In union is strength." Comprised in the agricultural community is a power, which during years of unparalleled difficulties, the world was not able, either by force or treachery, to subdue; but which, under the present emergency, is overawed by the machinations of a comparative handful of cotton-spinners. This power can no longer lie dormant. It must be roused from the sleep of apathy, into life and action, or it will soon be too late. Destruction, in the garb of Free Trade, is at our very doors. But, unlike their clamorous opponents, who vainly compass sea and land to find a remedy for our national distress, the landowners, agriculturists, and friends of home commerce must hold fast the bar of protection, and be guided by the finger of an all-bountiful Creator, which invariably points to our own soil whence the remedy can alone be derived—to a soil that abounds in other resources besides turnips, grass, and corn, of which the most important, at the present crisis, is the flax-crop; because, if cultivated to the extent required by our spinning-mills for the fibre, and by our agriculturists for the seed as a substitute for oil-cake, it would afford employment to the redundant and rural cotton-manufacturing population of the whole kingdom, and at once put a stop to the cry for employment, and the rage for Free Trade.

I have shown, in my former writings, some astounding facts relative to the value of flax and linseed; one of which is, that 500,000 acres are required to supply the demand of this country alone. Now, when we consider how inadequately the soil remunerates under our present system, and the consequent depression of trade, it must surely be acknowledged that the appropriation of such an immense breadth of land to the growth of this prolific plant, would be attended with the most beneficial results throughout the kingdom. For instance, the average value of 500,000 acres of flax, independent of the seed, oil, and cake, exceeds six millions of money.

This enormous sum is annually sent out of England, to purchase foreign flax of foreign farmers, to the encouragement of foreign agriculture. Suppose the corn crops sent to market were less than usual, by 500,000 acres, the price must neces-

sarily rise, and as much, if not more money, would be obtained for the small as for the large supply, and consequently the whole amount of the 500,000 acres of flax would be returned a clear profit to the grower, while the linseed alone would not amount to less than two or three millions. The whole of this seed would, according to the new system of grazing, be consumed on the farms where grown, and the necessity of importing a single ton of oil-cake be obviated. Also, instead of importing corn and meat in the shape of cake, we should export 500,000 acres of flax; and thus, about nine millions would be added to the home circulation, and expended in the advancement of agriculture, the renovation of trade, and the employment of the people.

But the substitution of one acre in twenty-five of the turnip crop, and the appropriation of less than half the land that would otherwise lie fallow, to the growth of flax, would render the supplanting of corn unnecessary, and confer upon the nation those benefits which could not fail to realise the hopes of every true friend to humanity.

The scheme undoubtedly appears chimerical to many, but it ought to be remembered that mankind is generally more hasty in condemning new theories than anxious to ascertain whether those theories are founded upon sound principles. Thus did the substitution of cattle-compound for foreign oil-cake undergo the ordeal of a vehement opposition; but now, the opposers have become its most zealous advocates; and I venture to predict that similar results will attend the cultivation of flax. In truth, many agriculturists, in various parts of the kingdom, who formerly expended hundreds in the purchase of foreign oil-cake, do not now spend as many pence. This simple fact speaks strongly in favour of home-grown and home-made cattle food; but volumes would be required to describe the indirect advantages which must inevitably accrue to agriculture and to the nation, would every farmer reject entirely the use of foreign cake in favour of the produce of his own land.

The whole process connected with the growth and preparation of the flax crop to the farmer, is far more simple than writers in general would lead us to suppose. My own expe-

rience, for the last five years, often causes me to suspect that the elaborate descriptions in books were intended rather to deter, than to encourage, an extended culture of this important plant in England.

The wily Dutch were certainly the first to promulgate the notion that it was impossible to obtain both fibre and seed at the same time; a notion which, however absurd, regulated the practice of England, Scotland, and Ireland, till the year 1841; many asserting that the steeping of the stalks with the seed, tended to improve the quality of flax; which is now found to be an erroneous opinion, because flax itself contains oleaginous matter that requires extraction instead of addition.

Moreover, the necessary ploughing and harrowing were supposed to be monster-operations, totally beyond the abilities of British farmers: but, when our Belgian instructor landed in England, he was surprised at the garden-like appearance of our farms; and, on his arrival in Norfolk, exclaimed, "Your lands are already fit for sowing!"

Singular as it may appear, a movement, in the above-named year, accidentally simultaneous, took place in the north of Ireland, and at Trimmingham, in Norfolk, to break through prejudices, founded solely upon ignorance and idleness. Industry, aided by the dictates of common sense, prevailed. For it is recorded in the Report of the Flax Improvement Society of Ireland, that from sixty to eighty thousand pounds' worth of seed was saved last year, without injury to the fibre; and it is calculated that, in the course of a year or two, no flax will be steeped with the bolls, thus adding to the wealth of that country no less than 300,000*l.* yearly, according to the present extent of culture: while in Norfolk no flax has been grown without an ample return of seed, as appears in the Report of the National Flax and Agricultural Improvement Association.

The entire management of flax, from the preparation of the land for sowing, through every stage, is, I repeat, work suitable to the commonest capacities. No apprenticeship is required; for, by the assistance of one experienced youth of 18, very many can be taught at once all the mysteries of harvesting, grassing, and scutching the crop for market. Through

this means more knowledge would be disseminated than could be obtained from a multitude of written descriptions. And, although I shall endeavour, from time to time, to afford information with my pen, I strongly advise the formation of local societies to defray the expenses consequent upon instruction; which, once obtained, the fear of trouble, risk, and loss, would merge in the happy possession of those benefits that were unattainable through any other source.

Except for the manufacture of cambric and fine lawn, flax is easy of culture. It will grow upon any soil, flourish in any climate, and ensure success to every grower who manures his land and tills it well.

After the seed has been sown, no more care is required than is usually paid to other crops, till the time of harvest, when, instead of being mowed, it is pulled up by the roots, partially weathered, tied into sheaves, and stacked like wheat. This is a safe and common practice, though there are some variations, which I shall hereafter particularize. My present object is, first, to offer directions for—

PREPARING THE LAND, than which nothing can be more simple; for, if the field destined for flax has been ploughed the full depth, previous to the frost, it will only be necessary to reduce the surface to a garden-like state, by harrowing, scarifying, and rolling; it being scarcely possible to render the land too fine.

In order to ensure a first-rate crop, it will be necessary, during the above process, to sow six or eight bushels per acre of bone-dust, and about two cwt. of real guano, by which means they will be intimately mixed with the soil; or, if bone-dust cannot be had, the guano might be increased to three or four cwt. per acre. But about eight loads of good farm-yard manure, well decomposed and mixed with mould, is much to be preferred. Where land is in a previously rich state, less manure will, of course, be required; but if it has only been slightly ploughed, a repetition will be necessary, as well as of the scarifying, &c. Small pieces of grass and roots of weeds left by the harrows should be gathered up, and a light roll drawn over the land before.

SOWING THE SEED, in order that it may fall upon an even

surface. Linseed is generally sown by hand; but this process is best performed by such machines as are used for grass seeds. Some prefer depositing the seed by a drill set at intervals of about seven inches: a practice I at first adopted, but now discontinued in favour of the broad-cast system, because the stalks will grow to a greater length, and be more equal in size; nor is my land infested with any noxious weeds to render hoeing necessary. Where the seed is sown by the hand, the machine or the drill, it must not be deposited deep. Half, or one inch, in damp weather, and one and a half in dry, ought not to be exceeded.

If seed and coarse flax are the aim, six pecks an acre will be sufficient; but if fine flax and seed, eight, ten, or twelve pecks will be necessary. It will be found in general that the greatest quantity will produce the most valuable fibre, but the least seed.

A sandy does not require so much seed as a heavy soil; but the inexperienced will find the most profitable crop to be that grown from six to eight pecks. Observe, if the drill is used, the creases should be filled up with a bush; but if the seed is sown broad-cast, fine light harrows must be used. An extra turn or two, therefore, with the harrows, the roll, and the scarifier beyond the requirements for barley, will be sufficient. It will also be found that, where the soil has been well prepared and cleaned, the cost for weeding flax will be very trifling; because, when the land is rich, the plants spring up with astonishing rapidity, and quickly overtop the small weeds. It is necessary, however, to remove the larger, but much injury is often done in the attempt to eradicate the smaller.

The first week of March to the middle of April is the best time for sowing; if deferred two or three weeks longer, the stalks will, in most cases, be short and of little value, though the produce of seed per acre may equal the early sown.

The editor of the 'Farmer's Herald' observes that—

“The recent establishment of societies in Ireland, as well as in several parts of England, for promoting the growth of flax, leads most naturally to the consideration, how far the ma-

nufacture of cotton may be replaced by that of linen. * * * *
 Flax may surely be as cheaply grown here, as cotton may be imported: and if the manufacture of it is not more costly, why may not British skill and enterprise be exerted to supply the world with a fabric more beautiful, more durable, and therefore more desirable, than cotton? The more a nation can produce of those articles which the world requires, the more wealthy that nation will by consequence become: now, could we grow cotton, as well as manufacture it, we should be richer by all those vast sums paid every year for the raw material."

It is certain that flax can be grown in this country to any extent, and that it must ever be the interest of the owners and occupiers of the soil to supply the demand; thus enabling our manufacturers to compete with the cotton trade, and rendering them real, instead of nominal exporters of linen. Spinning-mills would be erected in every populous district, hand-loom weavers find ample employment, markets be opened to the farmer for the sale of flax, and the suffering poor be emancipated through the multitudinous occupations arising from the inestimable flax-plant. Nor let it be supposed that I indulge in empty theories: for flax cannot, like cotton, be woven by the power-loom, and the erection of spinning-mills in one populous and distressed locality is already in contemplation; particulars of which, with recent accounts of profits derived from the growth of flax in this neighbourhood, I hope shortly to have an opportunity of communicating.

I remain, yours, &c.,

JOHN WARNES, Jun.

Trimingham, Mar. 13th, 1845.

No. XX.

SIR,

IN offering to the public the 20th and last number of this series, I feel a degree of confidence that experience, and an intimate knowledge of my theme, alone can justify.

Throughout my pamphlets, and innumerable letters both public and private, I endeavoured to show that the soil of Great Britain possessed resources adequate to the wants of the population; and that the flax-crop was to be the medium of developing those resources. As yet, no one has successfully refuted my theory or disproved my statements. The last attempt was made by Mr. Cobden in the House of Commons, whose observations, upon that occasion, were weak and inconsistent, a mere echo of the Anti-Corn-Law League. But flax, instead of being rejected as worthless, is now cultivated more systematically in Norfolk and Suffolk than heretofore; and, if I may judge from an extensive correspondence, will be grown this year in every county of England; also in Scotland, North and South Wales, Jersey, St. Agnes, &c.

The congeniality of our climate to the growth of flax, the non-exhausting effects of the crop, the extraordinary produce of seed per acre, and value as cattle-food, the profits derived, and the fund of employment afforded, are facts of more weight in favour of the flax cause than a multitude of arguments, and prove incontestably the soundness of my advocacy. Of these facts Mr. Cobden was, or ought to have been, aware, when he introduced to the notice of Parliament the Report of the National Flax and Agricultural Improvement Association, for they were recorded in the report itself.

That "most deadly weapon, furnished to the lecturers of the Anti-Corn-Law League," to which Mr. Cobden alluded, was first wielded against landowners, in a paragraph published by the League in the *Manchester Guardian* of the 9th of October last, and which I successfully encountered in No. 14 of my series. Mr. Cobden's arguments being couched in the same terms, and implying precisely the same questions, are as easily refuted, which the inquirer will perceive by the following extract:—

"1st. How can the English grower afford to sell flax for the same price at which the foreigner imports it, free of duty, at less cost for labour, and unburdened by a national debt, poor, highway, and county rates?

"2ndly. Why cannot the English grower afford to sell wheat

for the same price at which the foreigner imports it, free of duty?"

"I answer, that the quantity of flax grown in this country is so much beneath the demand that the foreign farmer or speculator, knowing our necessities, is able to charge so high a price that the British grower can readily accept the same terms, although burdened with all those disadvantages from which the foreigner is exempt.

"Formerly, the superiority preponderated in favour of British flax; but, during the war, Government removed the restrictive duties. The foreigner then inundated us with flax, obtained the ascendancy, exercised ever after an arbitrary control over the flax market, and compelled our manufacturers to pay for the raw material, not, as the League asserted, 'about 43s. only,' but about 140s. per cwt.; or, instead of 43*l.* per ton, 140*l.*; while the Belgian farmers in particular realized from 30*l.* to 50*l.* per acre for what they significantly term their 'golden crop.' A serious warning of what may be expected when the duty on foreign wheat shall be a penny a quarter!

"It will now appear evident to the most common understanding, that, should we become as dependent upon foreign nations for bread as we now are for flax, English wheat must inevitably share the fate of English flax. Land would be thrown out of cultivation; the foreigner obtain the command of price; and the few growers of wheat, like the few growers of flax, would alone reap a profit."

A copy of this letter was forwarded to the editor of the above-named paper, of which, for obvious reasons, no notice was taken; nor do I expect that the "lecturers of the Anti-Corn-Law League," or even Mr. Cobden himself, will venture a reply. In truth, if the English farmer needed a weapon against free trade, Mr. Cobden has supplied him with one in the above comparison between the importation of flax and that of wheat.

It is, undoubtedly, the especial province of the Legislature diligently to enquire into the latent resources of the country, to render them subservient to the wants of the people, to uphold and protect the working classes, and to provide

them with every legitimate means of subsistence; but never till the present period was a member in the House of Commons heard to revile British landowners for attempting to advance the best interests of the nation, and to ameliorate the condition of the poor.

Mr. Cobden's attack upon the National Report was opposed to every principle of patriotism, and contrary to sound political knowledge—a report fraught with information of the highest importance to the state, holding out the prospect of “employment for the redundant population,” and “a remedy for the distresses of the people”—a report “submitted to the ordeal of the strictest scrutiny,” and which, if introduced to the notice of Government at all, should have been accompanied with a recommendation to serious attention—a report, the accuracy of which, if Mr. Cobden doubted, he ought to have instituted the inquiry challenged, when he would have discovered that the growth of linseed, with box-feeding and summer-grazing, was a far better method of promoting the “welfare of the farmers of Wales, of Scotland, and of Wiltshire,” than that of “importing foreign beans, peas, and oats to fatten their cattle;” also, that a judicious and systematic introduction of the flax crop would remove from the rural and manufacturing districts all distress consequent upon the want of employment and of adequate wages, because the demand for work would be supplied, the labour-market cleared, and remunerative wages insured. But the League are too well informed upon these subjects to risk a discussion that would end in the overthrow of their favourite scheme of ruining the landed interests of the country.

The original and chief pretext for free trade was the improvement of the condition of the redundant population, which the manufacturers averred could only be secured by an interchange between British manufactures and cheap foreign bread. But, no sooner were flax associations formed with the view of providing employment for the people, and cheap provisions from native resources, than the promoters were unjustly and illiberally attacked by the Anti-Corn-Law League. I say unjustly, because the League attribute to the supporters of the flax cause an intention of increasing the price of wheat,

and of lessening the means of subsistence ; illiberally, because, in their strictures upon our proceedings, they studiously avoid the explanation of our real designs—designs such as every patriot and philanthropist must review with delight ; but such as our cold-hearted and misanthropic opponents perseveringly misrepresent.

The speeches delivered at our various meetings all evince the kindest sympathy for the distresses of the poor, and a desire to promote the culture of flax for the double purpose of providing employment, and of introducing not only cheap bread, but cheap meat into their cottages.

My visits to Sussex, that appear to have given Mr. Cobden so much offence, were undertaken with exclusive reference to the above objects ; and the happiest results have followed. I should rejoice if similar opportunities were afforded me in Lancashire, where I doubt not that my services would be equally beneficial, and that the operatives of Manchester would soon be supplied with cheap provisions from the resources of their own county.

But I should esteem it a higher gratification could Mr. Cobden be induced to visit Trimmingham, and personally to investigate the effect of those measures which he so incautiously ventured to ridicule ; measures that, notwithstanding the taunts of those who have devoted to the subject *fewer minutes* than I have *years*, would, if universally adopted, prove the panacea for the distress both of the rural and manufacturing districts.

Mr. Cobden and his adherents, though indirectly, have not been the least amongst my coadjutors ; because the effect of their proceedings compels many agriculturists to turn their attention to the cultivation of flax, which, under a remunerative price for corn, they would for ever have rejected. Therefore, should the schemes of the League ultimately prove successful, the British farmer, sooner than allow his fields to lie waste, will appropriate them to the growth of flax ; and, with labourers fed upon cheap foreign provisions, be enabled to produce the raw material at a price successfully to compete even with cotton. Thus would free trade be as fatal

to the manufacturers of that article as to the growers of corn.

We hear of no objection to the growth of flax except from cotton manufacturers, who are perpetually exclaiming, "We cannot eat flax;" while flax-spinners in particular, and all who are conversant with the real properties of the crop, recommend and encourage its culture. Both parties are zealous advocates for free trade. The cotton-spinner, however, foreseeing the injurious effect that a supply of cheap linen would have upon calico, endeavours to mislead the public with respect to the object of the patriotic promoters of the flax cause. He also aims at the removal of restrictive duties upon corn, regardless of throwing a large proportion of our fields out of cultivation, and of our rural population out of work.

But the flax-spinner, on the contrary, offers, as some compensation for free trade, the circulation of that capital at home which he now sends abroad for the purchase of flax; a circulation in which is involved five or six millions every year—the employment of all descriptions of idle hands—and the reduction of poor-rates.

Under these circumstances, it behoves both landlord and tenant to become thoroughly acquainted with this important subject, remembering, "that flax is a double crop; that the seed alone remunerates; and that whatever the fibre produces above the cost for labour, is gain."

It will be found that the want of instruction in the proper management of the fibre, is the only real hindrance to success. Even in this neighbourhood we have something to learn, particularly with respect to steeping and grassing. I have therefore engaged an instructor from Belgium, versed in all those modern improvements which have rendered that country so famous for the production of the most valuable flax. My agreement with the foreigner has especial reference to the teaching of English youths; and I take this opportunity of observing, that young active labourers of good character, from any part of the kingdom, may be sent immediately to Trimmingham to acquire a knowledge of the business.

In the course of three or four months they will return com-

petent to teach others, and be the means of disseminating information in the only effectual way; for, though every process is simple, and easy of attainment, written explanations cannot obviate the necessity of practical illustration.

The only expenses incurred will be for travelling and maintenance, which for each pupil cannot exceed 10*l.*; a sum insignificant compared to the benefit derived: because 10*l.* may be either lost or saved in the preparation of only one acre of good flax. This sum might be raised by agricultural societies, or by a union of parties interested in the growth of the plant, at 6*d.* or 1*s.* a week each for the time proposed. I mention these particulars in order to show by what simple means great objects may be accomplished; and I trust that the arrangement will be acceptable to all my correspondents who can conveniently avail themselves of it, or to others who may have been induced to sow flax at my instigation.

If the Irish, who have been growers of flax from time immemorial, found it desirable to form societies, and to introduce Belgians to improve their system of management, how much more necessary must it be for those districts to adopt similar plans, where flax was never grown before. The finest crops, if not properly handled, will fail to remunerate; but if treated according to the Belgian system, no farm produce, at the present period, repays so well. For instance, since the publication of the Report of the National Flax Association, Mr. Smith, of Gunton, sold to the Messrs. Marshall, of Leeds, the produce of two acres of flax, which, with the seed, amounted to 48*l.* Mr. Barcham, of Antingham, disposed of 60 stone of 14*lbs.*, and of about 20 bushels of seed grown upon one acre. Many similarly productive crops have been sold in Norfolk and Suffolk; but not being in possession of accurate returns, I cannot at present record them. It is, however, worthy of observation, that the price of the best Norfolk wheat is now only 22*s.* 6*d.* per coomb, while that of sowing linseed is 40*s.*; also, that barley is selling at 13*s.* 6*d.*, and crushing linseed at 30*s.*; all of native growth.

Whether the reader refer to the above facts, which admit of no refutation, to our advancement in the arts of preparation, to the ingenuity and efficacy of our machinery, or to the growing

spirit of inquiry, he will discover how senseless and unavailing were the attempts to thwart my advocacy of these important subjects, and to confine within the limits of a locality benefits that were ordained for the kingdom at large.

Our flax-ship may now be considered fairly launched, requiring only skilful mariners to direct her course. That her voyage will be prosperous, I entertain no doubt; because the necessities of an increasing population imperatively demand that food, raiment, and employment, with which she is so richly laden;—food, because of the seed of flax, which, formed into compounds to fatten cattle, produces corn as well as meat—raiment, because of the linen obtained from the stalks—and employment, because of the thirty branches of business attached to the crop.

If idleness be the root of all evil, the employment of the poor must ever be a prominent object of Christian duty. Could my readers witness the beneficial effects of flax-scutching alone upon certain classes destitute of all moral and religious order, they would firmly unite with me in the furtherance of this great cause, nor desist from their labours till flax shall have become a staple commodity of this country.

During my progress, I have been enabled to surmount difficulties to which I shall ever revert with gratitude and astonishment. Had my opponents been capable of appreciating the principles by which I was actuated, they would have shared with me “the luxury of doing good,” and escaped an unenviable notoriety now inseparably attached to the history of the flax-cause.

And here, I must briefly advert to the encouragement derived from many of my correspondents whom I may probably never see; but whose intelligent letters I shall retain as pleasing remembrances of friendly co-operation.

According to my original intention, I shall now proceed to compile this series, with my pamphlets, &c., and to republish them, by subscription, in a collected form, dedicated to the landlords and tenants of Great Britain. The work will contain ample directions for grazing all descriptions of stock, and for securing the flax-crop according to the Belgian system. The whole will be illustrated by engravings of the bullock-boxes,

with the machinery and apparatus requisite for the preparation of flax, and for the formation of the seed into the various fattening compounds.

The price will be regulated by the number of subscribers, but will not exceed five or six shillings. All I require is indemnity from actual loss; my object being the good of my country; my reward, the gratification of success.

I am, &c.,

JOHN WARNES, Jun.

Trimingham, May 9th, 1845.

CONCLUDING REMARKS.

London, March, 1846.

To the foregoing pages I could add a volume of letters, acknowledging the benefits derived from the adoption of my plans. But such evidence, however gratifying, is not essential, because it is impossible for any to fail of success, provided they adhere to the rules prescribed. Nor is it necessary, at the present juncture, to enforce the subject upon the attention of agriculturists. Henceforth, the flax cause will rest upon its own merits; which, if we may judge from the signs of the times, must ultimately be established.

The greatest propellers, however, powerful as the screw of Archimedes, are the measures of Sir Robert Peel, which deprive the farmer of remuneration from every crop except flax. He will, therefore, be compelled to introduce into his rotation this important acquisition, which, under a milder administration, he would for ever have rejected.

During my sojourn in the metropolis for the purpose of superintending the publication of this book, I received many very interesting communications, from which I select, for the consideration of the reader, the following brief extracts:—

“ Ormsby, Norfolk, March 7th, 1846.

* * * *

“ What flax I sent to Hull last year paid me 8*l.* 10*s.* per acre clear of all expenses. * * * “ RICHARD GLASSPOOLE.”

“ Fenton Barns, March 11th, 1846.

“ SIR,

* * * *

“ Some ten years ago I grew nine imperial acres of flax. * * * The crop was sold at Perth and Dundee, where it fetched the very top price, if I remember right, 60*l.* per ton. I also sold the seed at a very high price, the quality being excellent. * * * After deducting all expenses, it left a clear profit of 15*l.* per acre, which was certainly good considering I was a novice at the business. * * *

“ GEORGE HOPE.”

“ Hembury Fort, Honiton, March 19th, 1846.

“ I enclose the account of my flax, which I have put down low, so that I may be within the mark. * * * We shall certainly require the services of one of your Belgian flax-dressers in this neighbourhood. * * *

“ Debt and Credit of one Acre :

	£.	s.	d.
“ Ploughing three times	1	0	0
Seed, two bushels	1	0	0
Working in	0	2	6
Pulling	0	10	0
Dressing Flax, two packs an acre	3	0	0
Rent	1	10	0
	<hr/>		
	7	2	6
By Seed, sixteen bushels at 7s.	5	12	0
Flax, two packs, at 6l. per pack	12	0	0
	<hr/>		
	17	12	0
	7	2	0
	<hr/>		
Clear	10	10	0
	<hr/>		

“ WILLIAM PORTER.”

“ Willoughton Grange, Spittal, March 17th, 1846.

“ SIR,

“ Having grown a very excellent crop of flax last season on a piece of poor undrained clay land, with the application of two cwt. of guano; and having thrashed the seed a short time since (23 bushels per acre), I request to know whether I should prepare the fibre according to the Trent-side system. * * * I may add, that I am so well pleased with flax as a fallow-crop, that I intend to sow ten acres this year. * * * Linseed is now very dear, being ten shillings per bushel.

“ W. J. NICHOLSON.”

In an official document, for 1846, taken from the Fifth Annual Report of the Irish Flax Society, “ Presented by order of Her Majesty,” I perceive that the profits upon one acre of flax, English measure, would be 20l., as follows :

“ *Model Farm, Caledon, November 29th, 1845.* ”

“ SIR,

“ In answer to yours of the 24th, I have much pleasure in furnishing you with an account of the flax crop, and expenses thereon, grown on the Earl of Caledon’s model farm. Crop, 1845.

	£	s.	d.
“ Produce of 1 acre, 1 rood, 39 perches, sold at } 11s. 9d. per stone }	55	19	7½
Tow	0	8	0
130 bushels bows, which I consider well worth } 8d. per bushel }	4	6	8
	<hr/>		60 14 3½

Expenses of Crop.

	£	s.	d.
5 bushels seed	3	16	6
Weeding	0	10	0
Pulling, rippling, and steeping	4	3	8
Taking out of steep—spreading	2	1	4
Lifting and tying	1	2	8
Scutching	4	9	4½
	<hr/>		16 3 6½
Leaving a balance of	44	10	9

Or at the rate of 29l. 13s. 10d. per acre, after deducting all expenses.

“ It is but fair to add, that we had to carry the flax to and from the steep, on barrows, eight perches, as the steep was in a bog, and the carts could not get near it—consequently, had the carts got close to the steep, there would have been at least 1l. 10s. saved.

“ I am, Sir, your most obedient servant,

“ JOHN BARR, *Manager.* ”

“ *J. MacAdam, jun., Esq.* ”

The most important inferences are to be drawn from the above accounts, alike advantageous to landlords, tenants, and labourers, in whose prosperity every branch of the community is deeply interested.

It will be seen that the clear profit, either upon good or inferior flax, is greater than upon corn; and that, under the improved system, the fibre only of the former is sent to

market, while the seed, chaff, and broken stalks are appropriated to the fattening of cattle and to the making of manure.

No objection, therefore, can now be urged on account of exhausting effects. The prohibitory clauses in old leases arose from the disregard paid to the preservation of the seed, or from selling the entire crop to factors called linmen. The greater portion of linseed in Ireland, even at the present day, is destroyed, and the same ruinous custom still exists in England, as the subjoined extract from a letter before me proves :

“ *Willoughton Grange.*

* * * *

“ I rode twenty miles to the warp lands on the side of the river Trent, to learn some particulars about the general process flax has to go through; and saw a field of 12 acres covered with the stalks just taken out of steep and the seed adhering to them: the owner of which showed me the various stages they have to go through. He stated that they always got their best crops of wheat after flax, and said that he would buy all the flax that I could grow.”

I desire to draw particular attention to this point, because so much is said about the exhausting effects of flax beyond other crops; which, although ill-grounded, operates against the cause; and I think that I cannot more effectually enforce this part of my argument than by inserting a letter on the subject just forwarded to the ‘Morning Herald’ and other journals.

FACTS CONNECTED WITH THE FLAX CROP.

SIR,

1st.—Under the improved system of husbandry, flax is not exhausting, but a highly restorative crop.

2nd.—If sown primarily for the seed, the value of the crop is equal to the average value of wheat, barley, and oats.

3rd.—Under experienced management in every department, the crop is worth more than wheat.

4th.—Flax will grow upon any soils that produce corn, and upon soils where corn will not grow at all.

5th.—The plant will flourish after any crop, turnips excepted, and probably carrots or mangel wurzel.

6th.—Flax has been grown upon my farm during the past six years in the following rotations, viz. : clover, stubble, flax,

wheat, barley—wheat, flax, wheat, barley—wheat, barley, flax, barley—potatoes, flax, turnips, wheat—wheat, potatoes, flax, turnips the same year, barley—and so on, the improvement in each field being distinguishable.

7th.—This year I have sown already four acres and a half, upon clover stubble; one acre upon barley instead of turnips; three-quarters of an acre that never produced any thing, save briars and thorns; and three acres, the previous crops having been flax, wheat, and barley.

8th.—I have now six fields of wheat growing, the most luxuriant of which is that after flax, and even superior to any in the parish.

9th.—When wheat follows flax much less seed is required.

10th.—One acre sown with flax to every hundred now under tillage, would produce at least 35,000 tons of linseed more than ever were imported of oil-cake in one year; afford employment for double the present redundant population; and not then supply half the demand for the fibre.

From observation and some experience, I am of opinion that clay land, such as is now allowed to lie fallow, would produce abundant crops of wheat and flax much longer than any other rotation.

I could adduce many additional facts in refutation of former prejudices against the flax-crop, and in favour of its immediate adoption in every agricultural district throughout the kingdom.

Two fundamental principles are involved in this important question :—

1st.—The successful cultivation of the plant depends upon the preservation of the seed—a point hitherto not recognised either by the theory or practice of past or present times.

2nd.—The national introduction of the crop can only be achieved through the exercise of patriotism. On this ground alone, I hold myself in readiness to co-operate with any parties, regardless of every private consideration.

I am, Sir,

Your obedient Servant,

JOHN WARNES.

Golden Cross, Charing Cross,

April.3rd, 1846.

Without animal-manure for the land, and employment for the people, it is impossible for agriculture to prosper. These, the flax crop will supply in an eminent degree if properly introduced: and I doubt not that the average produce of the kingdom in corn and meat would be increased three or four fold in a very few years.

The value of manure obtained through my system, may be discovered on comparison with artificial applications; the latter being seldom of use beyond twelve months, while the efficacy of the former is perceptible for three or four years. Were islands of guano imported, the necessity of resorting to native resources for manure could not be obviated. The more this subject is investigated, the more clearly it will be seen that the order of Providence has placed within the reach of every farmer the means of re-production, without recourse to foreigners either for food for his cattle or manure for his land. The only obstacle centres in the fear of trouble, that bane to agricultural improvement !!

Did we live in an age of miracles, a greater evil could not be inflicted than the power of obtaining provisions without trouble, labour, and expense. Hence, were it possible that all crops could be produced at the cost of a few pence per acre, according to the agricultural certificates of Mr. Bickes, now in London, a discovery more fatal to the nation could not have been made; for what farmer would trouble himself to breed, rear, or fatten cattle?!! the expense of cartage upon the manure alone being infinitely greater than for the specifics proposed by the above-named foreigner.

The time has arrived when the scientific agriculturist must distinguish between the shadow and the substance; and no longer be guided by theory in opposition to experience. Every obstacle to good husbandry ought to be removed; monopoly and mystery abolished; and the wide field of knowledge opened to all without money and without price. The strong should help the weak, the wise instruct the ignorant, in order that farmers may be enabled to stir up the latent resources of the soil, and obtain a per centage upon the money employed through increased production.

In the best cultivated districts there are no regular plans for

ensuring, throughout the year, an *independent* and *adequate* supply of cattle-food and manure; a defect which the system embodied in this work is designed to remedy.

The extraordinary facilities afforded for the purchase of artificial manures, are only encouragements to sloth and extravagance. One tailor does not employ another to make his clothes; neither should our fields be dressed through the medium of manure-companies.

The annual cost for agricultural nostrums is infinitely beneath the loss by fallows, and by the waste upon farms. Were the former sowed with linseed, and the latter obviated, the necessity for purchasing manure would be avoided, and the soil permanently improved. Let the reader calculate, if possible, the difference between a hundred acres of land lying idle, subjected to rent, rates, and tillage, and a hundred acres sown with flax. For my own part, I am unequal to the task, so innumerable are the ramifications of advantage in favour of the latter.

During the Rebecca-riots, I often expressed, to my correspondents in Wales, an opinion that the box-feeding system would abolish more toll-bars than the carters of lime; because farmers would obtain a sufficient supply of manure without recourse to the kiln; and thus render unnecessary the payment of toll.

I cannot therefore conceal my gratification at being informed, a few days since, by Mr. Walter T. Jones of Cefu Reig, Merionethshire, that he intended to have my work translated into the Welsh language immediately; an undertaking, which, aided by the patriotic exertions of Mr. Purchas of Pilstone, will open a new agricultural era to that neglected principality.

Ireland, also, will now learn the intrinsic value of the flax crop. For, although competition may reduce the price of the fibre, her farmers will receive an ample compensation through the fattening properties of the seed.

By the introduction of the improved system of managing flax, Scotland would derive the greatest advantages; of which the rearers of cattle will be large participators. To them a supply of native linseed must prove a benefit that cannot be

duly estimated. Because they will be enabled to retain at least the condition of their cattle through the winter, and to secure an abundance of efficacious manure. I refer to my letter on the Use of Linseed (p. 130).

But wherever flax-culture is extensively introduced, *there* the rates will be found lightest, and the condition of the people happiest.

Travellers in Ireland never fail to notice the comparative comfort of the poor in those districts where flax is cultivated and where it is not.

George Nicholls, Esq., one of the Poor Law Commissioners, in his very useful book entitled "The Farmer," says, "Can we doubt that what has thus been done in Ireland ought also to be done in England? The soil and the climate are at least as favourable for the growth of flax here as they are there, or as they are in either Holland or Belgium. Instructors may readily be obtained from either of these countries, or persons might be sent from hence to learn the various processes, and on their return they might impart instruction to others. The result would, I am confident, amply repay the outlay *by the benefits it would confer*, and the art once acquired would not be in danger of being lost. * * * * I have seen flax growing on mere bog in Ireland. The general introduction of the crop in England would constitute a new and most valuable element in the rotation, and would enable the farmer to vary and extend his successions, which is in itself a highly important consideration. * * * It may be safely asserted, therefore, that a flax-crop rightly managed is not only valuable as affording increased means of employment for our agricultural population, and highly profitable for the purposes of the manufacturer, and for the feeding of cattle, but that it moreover returns to the soil, in the shape of manure, as much, if not more, than any of the grain-crops."

It is only within the last few weeks that I had the good fortune to become acquainted with Mr. Nicholls and his writings. But, though short the time, abundant evidence has been afforded me of the soundness and benevolence of his views; his constant aim being the advancement of the condition of

the poor. That gentleman's endeavour to introduce the subject to influential parties must eventually be attended with success.

I lay down my pen, therefore, rejoicing in the bright prospect now open to my country, and assured that the cause no longer rests upon my feeble advocacy, but, I repeat, "Upon the thinking and intelligent part of the community; upon minds that perceive the vastness of the undertaking, and are willing to lend their powerful aid in carrying it out."

While occupied in correcting the press for this part of my work, I received the "Northern Whig" from Ireland, containing the following letter, which powerfully confirms the correctness of my conclusions.

London, April 8th, 1846.

"Treasury, 6th March, 1846.

"SIR,

"I am desired by Sir Robert Peel to inform you, that he has read, with attention and great pleasure, the Reports of the Society for Promoting and Improving the Culture of Flax in Ireland. He trusts that the efforts directed to so laudable and important an object will meet with ample success, and begs leave to send a donation of 25*l.*, with his best wishes for the welfare of the Society.

"I have the honour to be,

"Your obedient humble Servant,

"JOHN YOUNG.

"James McAdam, Jun., Esq.,

Secretary to the Flax Society, &c., &c."

A P P E N D I X.

CONTROVERSY

ON THE

“GOLD OF PLEASURE.”

SIR,

I observe that several of your correspondents mistake the plant called *Camelina sativa*, or Gold of Pleasure; and particularly Mr. Kimberley, in a paper read before the Royal Agricultural Society, mistakes it for a kind of flax seed. This seed is too well known to purchasers of Petersburg linseed as a noxious weed, which greatly diminishes the weight and value of those samples in which it appears; and I much regret to see English farmers wasting their energies upon anything so worthless. If any person doubt this assertion, let him make inquiry amongst the linseed brokers at Mark Lane.

Your obedient servt,

A LOOKER-ON.

SIR,

I am very much surprised at the reasoning of a correspondent (signing himself a “Looker-on”) in attempting to denounce the value of the Gold of Pleasure. He states that the Linseed Brokers of Mark Lane consider it a “noxious weed.” I can readily suppose that the dealers in linseed would object to its appearance in the linseed, as rendering the samples imperfect—but this circumstance no more proves the “worthlessness of the Gold of Pleasure,” than the mixture of rye in a sample of wheat (a frequent occurrence in this rye-growing district) would prove rye worthless;—each is good in itself, rye *inferior to wheat* in value: but a little more experience, I confidently predict, will prove the Gold of Pleasure to be *superior* to flax, in the opinion of the practical agriculturalist.

Yours, &c.,

DANIEL GWILT.

Icklingham, December 14th, 1843.

SIR,

The attempt to set up the Gold of Pleasure in opposition to flax and linseed, was to me at first a subject of considerable amusement. It came before me as follows:—About two years ago I received a printed circular headed “Gold of Pleasure,” giving a long and glowing description of its virtues, accompanied by a polite letter offering to supply me with a sample of the seed, and of the oil and cake extracted therefrom. I readily accepted the offer, and by return of post a parcel arrived containing a small vial of oil, a piece of cake as hard as a stone, and, to my astonishment, a little of the very seed of a plant that I had been at much expense to eradicate from my flax, as a troublesome and noxious weed. My correspondent informed me that he had disposed of some of the seed at five shillings per lb., but he observed, “If you or any other person are willing to become agents for the sale of it, the price would be four shillings per lb. for nine or ten coombs, with a liberal allowance for agency.”

Similar samples were forwarded and proposals made to the Editor of the *Norwich Mercury*, for at that gentleman’s office I was shown the seed, cake, and oil, with the accompanying correspondence.

I immediately returned samples of the seed with some of the straw and bolls taken from amongst my flax, with an account of my own experience and opinion of its utter worthlessness in comparison to flax and linseed.

I received a very gentlemanly answer, acknowledging the error into which the writer had been led, through the ignorant representation of a friend. I confess that I perused the circular in question with unusual care, well weighing the importance of a crop which, “ere long, was to take that place in the agricultural world to which, by its high merit, it was so justly entitled.” I then, with pen and ink, worked out the following question, founded on the assertion that “the produce will mostly be very abundant, as high as 35 to 45 bushels per acre.”—If an acre of land will produce 40 bushels of seed, weighing “56 lbs. per bushel,” what will be the value of the crop at five shillings per lb.? Answer, 560*l.* sterling. I involuntarily grasped the quill in my hand, fancying I at last had caught “the Goose that laid the Golden Eggs.” So unwilling was I to let her go, that I consulted living Botanists, and the writings of those long since dead, as to the intrinsic value of the seed in question. From every authority I received the anti-pleasurable assurance that it really was the pen, and not the goose, I held so firmly. The limits of a letter will not admit of numerous quotations; let one suffice from Smith’s *English Flora*, Vol. III. p. 164, under the head *Camelina sativa*, or Gold of Pleasure:—“The ridiculous pompous English name seems a satire on the article of which it is composed, as yielding nothing but disappointment.”

It may be asked, have you no further authority, from your own experience, for denouncing the Gold of Pleasure, than that of its accidental growth amongst your flax? I reply, last spring I appropriated a small plot of ground to its culture, and found but too much reason to acquiesce in Sir James Smith's exposition.

Mr. Editor, it is far from my object unnecessarily to expose individuals to ridicule, because intermixed with artful and designing men are many who, from want of experience of those things which they advocate, unintentionally lead the anxious inquirer into the adoption of fruitless schemes. To this number your correspondent, Mr. Gwilt, appears to belong. For in his letter of the 14th inst. he observes, "a little more experience, I confidently predict, will prove the Gold of Pleasure to be *superior* to flax, in the opinion of the practical agriculturist." Of Mr. Taylor, another of your correspondents, I have more reason to complain, because he has taken extracts, nearly verbatim, from my published statements and receipts for fattening cattle; displacing linseed for the Gold of Pleasure, and offering his mixture as a substitute for linseed compound. Also, Mr. Taylor underrates the produce of linseed per acre, which, instead of 16, averages, even on very ordinary lands, from 20 to 26 bushels per acre; indeed, in several instances, the value of the crops exceeded that of the land. He, however, reminds the reader that "when the price of corn is very low and cheerless, the Gold of Pleasure will never fail to produce the gold with pleasure and with abundance;" the seed to be had opposite the ominous Polytechnic Institution, price fifteen pence per lb. What a reduction! and yet at that rate the acreable value still amounts to 140*l.*, besides an "abundance of chaff for horses, manure, and the manufacture of whity-brown paper." I say ominous, because Polytechnic, meaning many arts, is ominous of the many designs to which the farmer is exposed.

Let me, then, warn him against the dangerous Scylla and Charybdis in Regent Street, and caution him to pursue the straightforward course to Mark Lane, where factors many will offer him the noxious "Gold of Pleasure" at about three farthings per lb., or perhaps for the trouble of sifting it from foreign linseed, in which it abounds; noxious on account of its unpalatable flavour and mal-adaptation to the fattening of cattle.

Mr. Skirving, the eminent horticulturist of Walton, assured me that he had sown some of the Gold of Pleasure this year, and found it the rankest weed imaginable.

I was informed only yesterday, by two Belgians, that in their country the stalks of this plant were used for brooms, the oil for lamps, and the cake for manure, but never for an article of food.

How indiscreet, then, the attempt to foster upon the country a per-

noxious weed in opposition to the inestimable flax-plant!—inestimable, because its acreable value exceeds that of any other crop; inestimable, because the fibre is convertible to the most useful, as well as the most costly, articles of wearing apparel; inestimable, because it affords more employment than any other production of the earth; inestimable, because of the seed, which produces a valuable oil, a superior cake to fatten bullocks, and forms the principal ingredient of the incomparable cattle-compound.

Again, how careful ought gentlemen to be who canter their speculative “hobbies” after *pleasurable* pursuits, lest they instigate others to gallop after phantoms that only allure them into fatal mistakes.

Reprehensible, too, is the man who ventures to recommend plans for public adoption of which he has not made full proof from often repeated experiments. “Lofty and incomprehensible theories have been too long obtruded upon the agricultural community, to the exclusion of those benefits which were absolutely within their grasp. The farmer’s attention has been directed to fattening his cattle upon foreign food, and to the vain attempt of enriching his land by foreign manure, instead of obtaining both from the resources of his own farm.” At the present eventful period, British agriculture is exposed to a species of high treason, aided by a powerful secret conspiracy on the one hand, and by an over-reaching, extorting, and plundering fraternity on the other, to counteract which ought to be the peculiar care of the protective agricultural societies now being established in various parts of the kingdom. It is my intention next week to forward No. 8 of my series, giving an account of the extraordinary results from summer grazing, and box-feeding with linseed compound, unmixed with grain or pulse, and showing the correctness of Mr. Fleetwood’s conclusions over Dr. Playfair’s theory of the non-flesh-making properties of oleaginous seeds. I beg to observe that I shall be ready to exchange a line as promptly as possible, either publicly or privately, with any party on the above strictures. If publicly, his name and address must be given, or I shall not consider him entitled to a reply.

I am, Sir, &c.,

JOHN WARNES, Jun.

Trimingham, Norfolk,
Dec. 23rd, 1843.

SIR,

Observing a letter in your interesting journal of December 5th, in which a statement of mine respecting the “Gold of Pleasure” is introduced, I hope that you will allow me to insert a reply in your next paper, to the said letter of Mr. Warnes.

I readily admit that I am sometimes too confiding, and that my

zeal in the cause of agricultural improvement has occasionally led me to speak too highly of a new discovery ; and upon no occasion have I been more doubted and disbelieved than in expatiating upon the advantages likely to arise from Mr. Warnes' speculation of growing flax, and substituting his incomparable compound in the place of cake, for both of which I was an early and zealous advocate. I would not intentionally mislead any one, but as I am extremely fond of my hobby, I trust that I may have the pleasure of riding him quietly without any jostling with Mr. Warnes : and time will settle our oily contentions.—

I am sorry that Mr. Warnes should have expressed himself so illiberally towards Mr. Taylor, who is a most highly respectable young man, a Fellow of the Linnean Society, and I believe a most eminent botanist. For his researches in botany are very extensive, and as he occupies some land in order that he may practically become acquainted with the properties of newly discovered plants, I trust that we may confidently look to some important acquisitions.—As to the probable worth of the Gold of Pleasure, I shall only state what *I do know*. In its green state it will furnish abundant food for sheep, and may be folded off for turnips, and if possible for seed. Turnips may on those follow, and a good crop obtained. It will yield an abundant crop of seed—affording splendid oil for lamps, and the finest machinery, having excellent cake and the seed compounded with barley equal and I might say superior to linseed.—I have fed sheep, cows, and poultry stock upon it with the greatest safety and satisfaction. I have had the cake analysed by two eminent chemists in London, and their directions confirm all that I have said of its valuable properties.

I will not tréspass any further upon your columns, than merely to observe that I do not undervalue Mr. Warnes's most praiseworthy endeavours to extend the growth of Flax—but I still think that the practical large farmer will not be readily brought to adopt it—as farmers in general dislike any thing out of the usual routine of business, and for that reason will continue to prefer the use of oil-cake, to Mr. Warnes's incomparable compound, and that cake can and will be made, and to great advantage, from the *home* growth of the *Gold of Pleasure*.

Yours, &c.,

DANIEL GWILT.

Icklingham, Suffolk,
Feb. 2nd, 1844.

LINSEED, *versus*, "GOLD OF PLEASURE."

To the Editor of the Farmers' Journal.

SIR,

The turn that the controversy on the above subject has taken, I must confess, both surprises and pains me. Had I made some monstrous proposition, such as the re-building of Babylon, or the completion of the Tower of Babel, hundreds would have ridden their "hobbies" to death, to aid the vain-glorious cause. Votaries, also, by thousands, would have offered their "Gold" with "Pleasure" at the shrine of ignorance and folly. No journey would have been thought too long, or sacrifice too great. The noble design of finding employment for the poor by this means, would have been lauded throughout the land, and difficulties would have vanished like the morning cloud or the early dew. But now that I point out feasible and simple plans for obtaining this National Desideratum, troubles are magnified, expenses exaggerated, and profits underrated. In vain have I travelled, written, spoken, during the past four years, to convince the Rev. Daniel Gwilt that his "early and zealous advocacy of my speculations" was founded on truth. Had the rev. gentleman offered me a practical, rather than a verbal support, few indeed would have been the words required to prove the "advantages likely to arise from my speculation of growing flax, and of substituting the incomparable compound in the place of cake."

First. He would have shown his beauteous flax-field waving in the wind; next, the linseed rattling in the Golden Bolls; then the bullock fattened in the box; afterwards, the milk, rich from compound, and the butter of matchless flavour. Mr. Gwilt would have proved by ocular demonstration, the fund of employment that the cultivation of the inestimable flax-plant would ensure to the able-bodied labourer in the field, and to the juvenile population in the cottage. He could also have pointed out the miseries that might be removed from the habitations of the poor, and the benefits that might be conferred upon the farmer, upon the landowner, and upon the clergy of the Established Church. Instead of which, allured by the glittering "Gold of Pleasure," the rev. gentleman forsook his early love, and now, supported by a mere "probability," asserts that his second favourite is more worthy than the first. For, he observes, "As to the probable worth of the Gold of Pleasure, I shall only state what *I do know*. In its

green state it will furnish abundant food for sheep, and may be folded off for turnips, and if possible for seed. Turnips may on those follow, and a good crop obtained. It will yield an abundant crop of seed, affording splendid oil for lamps, and the finest machinery, having excellent cake and the seed compounded with barley equal and I might say superior to linseed." It is difficult to define the exact meaning of the above sentences; I must therefore content myself with observing, that, however productive the seed, the British farmer will not be induced to cultivate a crop for the sake of sending lamp-oil, rather than fat bullocks, to market. And, as Mr. Gwilt produces no fat oxen from the stall, or sheep from the fold, to prove that the Gold of Pleasure compounded with barley is superior to linseed; so may I justly claim the victory for the "incomparable cattle compound."

'Tis true, the rev. gentleman may have "fed cows, sheep, and poultry-stock upon the Gold of Pleasure with the greatest safety and satisfaction" to himself; but to what extent, he has failed to communicate; nor is his advocacy supported by the strongest of all arguments—viz., by *profit*, whereas *mine* has always been enforced by this powerful ally. Hence the success of all my recommendations; for in no instance have I incurred the responsibility of promulgating statements that had not previously been substantiated by often repeated experiments. According to the account of Messrs. Gibbs, which appeared in your Journal of the 15th of Jan., Mr. Gwilt cultivated the plant in question eight years ago. It is strange that, during the whole of that period, no stronger evidence should be adduced than that of its having been given with "safety and satisfaction to cows, sheep, and poultry." No encomiums are passed upon the increased quantity of milk, the flavour of the butter, the improvement of the sheep, or of the additional number of eggs laid by the poultry. Contrasted with safety is danger; I should apprehend the most dangerous consequences to my cattle, were they compelled to eat the nauseous Gold of Pleasure, as a substitute for the pure and wholesome linseed. Nauseous, because whoever tastes only a few grains, I am confident, will never repeat the dose for the sake of pleasure. It is well known that change of food affects both milk and butter, and also the condition of the cow. To prove therefore the accuracy of my "speculation," two cows should be placed in separate stalls; one fed upon the Gold of Pleasure; the other upon linseed, in equal proportions, prepared alike, and at the rate of two or three pounds per day; the milk from each cow being, of course, kept by itself. I venture to surmise, that, at the expiration of two months, the evidence of the dairy-maid and of the yard-man will be much in favour of linseed. Seldom more than one at a time is kept upon my premises, which is generally purchased with her calf. She is kept in a box, fed on Linseed compound with the fat

cattle, regularly milked, and sold in about twelve months to the butcher.

Linseed-meal mixed with grains is used by cow-keepers in the metropolis and other large towns, by which the quality of the milk is greatly improved. But were the Gold of Pleasure substituted, I am persuaded it would prove deleterious. Both from mustard and rape-seed a cake is produced, which I never heard was used as cattle food, but always as manure. The Gold of Pleasure, being also of the Cruciferae order, partakes of the same nature; and therefore, however great the acreable produce, the main value must centre in its use as oil for lamps, and cake for land. No flax can be obtained from the stalks, nor fodder for cattle, more than from those of turnips, mustard, or rape-seed.

The attempt to supplant the culture of flax, by the substitution of the Gold of Pleasure, certainly must be founded on complete ignorance of both. Because I cannot for a moment suppose that either the Rev. Daniel Gwilt, Mr. Taylor the eminent botanist, or any of these gentlemen who engaged in this controversy, are at all aware of the real merits of the flax plant.

I have laboured in various ways, regardless of expense or trouble, to impress upon my country the importance of an extended cultivation of this prolific crop, with the view of finding that employment for the people, which alone can uphold a sinking empire, and revive a ruined population.

The experience of every day tends to confirm my expectation that the great cause I advocate must ultimately prevail.

The following extract, forwarded to me by a stranger, whilst writing this letter, will perhaps be considered an interesting confirmation of the statements and arguments which I have so repeatedly laid before the public :—

“CULTIVATION OF FLAX.—By their neglect of the cultivation of flax, the farmers and landowners of this country have sadly overlooked their own interests. Flax is commonly consumed in this country to the amount of 67,000 tons annually, the value of which, at a low average, amounts to between 4,000,000*l.* and 5000,000*l.* sterling. Every pound of this raw material is imported from our industrious continental neighbours—the French, Dutch, and Belgian farmers. * * * There is as good soil in England, for the cultivation of the flax-plant, as in Ireland, France, or Holland; * * * farmers can, by growing flax, clear greater profits per acre, than they can by growing wheat and barley. * * * The small farmers of Ireland can now make by an acre or two of flax, what will pay their rent for 30 acres. This never could be done by six acres of grain. In the north, 112,000 acres of flax were sown last year, and the calculation is that the value of the pro-

duce, at the low price of 45*l.* per ton, would amount to 1,707,150*l.* At the same time, I know that some has been sold so high as 140*l.* per ton, and a great deal at 64*l.* and 70*l.* per ton."

The above statements are either true or false. If false, they deserve a nation's censure; if true, a nation's adoption. Happily I can speak to their correctness in every material point; for I have in my possession ample proof from the parties alluded to, and from Captain Skinner, secretary to the Irish Flax Improvement Society. I visited Ireland for the purpose of inquiring into the correctness of those reports of which I had heard so much, and I was introduced to the most influential parties at and around Belfast. I attended their public meetings and flax-markets. I saw their spinning and scutching mills, and no information was withheld. I have, since, not ceased to promulgate my views and experience. The result has been the growth of some hundred acres of flax, and the fattening of thousands of bullocks upon linseed. The soil and climate of this country have been proved superior to any part of the world for the production of seed, and equal for that of flax. Public meetings have been convened in various parts, on which occasions numerous specimens of foreign and home-grown flax and seed were exhibited, particularly at Ipswich, in Suffolk. To the latter meeting the Rev. Daniel Gwilt was invited by advertisement, of which the following is a copy:—

"The Ipswich and Ashbocking Farmers' Club cordially invite the Public to their Annual Meeting and dinner, on the 3rd day of November, at Ipswich, when, to the customary exhibition of Farm Produce, Specimens of flax and linseed grown in Suffolk, Essex, Norfolk, and other counties, will be added.

"The method of Steeping and Drying Flax, of extricating the seed from the Bolls, the Fibre from the Stalks, and the Spinning of Linen Yarn, will be practically illustrated.

"To show the various purposes to which this important plant is applied, Flax, from the most inferior to the most costly articles of manufacture, will be submitted to public inspection.

"Arrangements will be made for the exhibition of Crushing Machines, at work with Steam Apparatus, and Coppers for forming Linseed, Grain, Pulse, or Potatoes, into a cheap compound to fatten Cattle, instead of Foreign Oil-cake.

"Pattern Boxes, upon an economical construction, for Grazing Bullocks, protecting them against Flies, and preserving the Manure, will be erected in the Show-yard.

"A variety of Agricultural Implements will be displayed, and inform-

ation on Practical and Scientific Agriculture given, in order to render the meeting at once interesting, instructive, and profitable.

“The exhibition of Machinery, &c., will be held in Mr. Chenery’s Pasture Field, from Ten till One o’clock, during which time the process of making compound will be often repeated.

“The show of Flax, &c., will take place in the Temperance Hall, near the above field, from Twelve till Two o’clock, to which Ladies are respectfully invited.

“At the above hour, the chair will be taken by the Right Hon. LORD RENDLESHAM, when the propriety of forming an Association to advance the interests of Agriculture, through the Cultivation of Flax, fattening Cattle upon Native Produce, Box Feeding, and Summer Grazing, will be taken into consideration.”

No supporter of the Gold of Pleasure, or of “the new flax seed,” appeared, but agriculturists from Norfolk were present, whose testimony induced many parties to adopt the new system of grazing—with what success Mr. Gwilt may learn from the Rev. J. C. Blair Warren, of Horkesley Hall, whose excellent letter on the subject lately appeared in your Journal; or from Mr. Catt, of Whitton, Mr. King, of Shotley, and from other members of the Ipswich and Ashbocking Farmers’ Club, upon whose premises Linseed is daily being formed into compound, and Cattle fattened in Boxes.

Mr. Editor, in concluding this brief defence of the flax-crop, allow me to assure you that I entertain towards Mr. Gwilt no other feeling than that of respect; and I should rejoice in the opportunity of a personal conference on the subject of our friendly contention. The present controversy has afforded me the means of more widely disseminating the merits of a plant, for the cultivation of which greater facilities abound in this than in any other part of the world, and from which a greater amount of employment is derived than from any other production of the earth; of a plant, for which five millions for the fibre, and many millions beside for the seed, oil, and cake, are annually sent out of the country. The home circulation of these millions would be the means of raising thousands from the depth of poverty and misery. The home circulation of these millions would be attended with incalculable advantage to the Farmer and the Tradesman, the landowner and the merchant, the husbandman and the operative. The home circulation of these millions would render the whole community prosperous and free.

I invite the public to a calm and sober consideration of these facts, and to the overwhelming truth, that employment can alone protect us against the encroachments of the revolutionist, or arrest the hand of the incendiary.

I invite the public to a close investigation of my letters, published in your popular Journal, and of my pamphlets. I invite the public to co-operate with the "National Association lately formed for the purpose of affording instruction and assistance in the cultivation of Flax, the use of the seed to fatten cattle, box-feeding, and summer grazing, &c. &c." And lastly, I invite attention to the circumstance of a branch to the National Association having been formed in West Norfolk, which is supported by the largest and most opulent agriculturists in the kingdom. Thus has the prediction, that extensive occupiers could not be induced to grow flax, already met a negative, and soon, I trust, their example will be followed by every farmer who desires to obviate the necessity of purchasing either food for his cattle or manure for his land.

I am, Your obedient Servant,

JOHN WARNES, Jun.

Trimingham, Norfolk,
Feb. 16, 1844.

HEMP.

NEXT in importance to the cultivation of Flax, would be that of Hemp, which is very largely imported into England. Nine-tenths of the whole quantity come from the Russians alone, who take nothing in return from the British farmer. Large tracts of marshes, and lands situated near marshes, even in Norfolk, that bear but a scanty herbage, would undoubtedly produce rich crops of hemp. I insert the following information on the subject, with the hope that it may conduce to a more extensive growth of this highly productive and valuable plant in England.

Hemp, or *Canabis sativa*, is an annual plant, usually rising to the height of five or six feet. In some situations it is, however, capable of attaining to a much larger growth. The flowers and fruit grow upon separate plants. Those bearing the flowers are called male hemp; those bearing the fruit or seed, the female. The fruit grows in great abundance on the stem of the female hemp. This seed is not preceded by any corolla; a membranaceous hairy calyx, terminating in long points, encloses the pistil, the base of which becomes the seed.

The male is quicker in its growth than the female, and generally rises half a foot higher, by which provision of nature the farina from the stamina, or the fecundating dust which conveys fertility to the seed, is readily shed on the lower plant.

Most soils may be made fit by good manuring for the cultivation of hemp, but rich moist earth is considered the most favourable to its growth. It seldom thrives on a stiff clay soil. A poor land will yield but a scanty crop, the quality, however, will be proportionably finer; while a strong rich land produces a greater quantity, but this will be coarse. Cultivators are therefore regulated in their choice of soil by the description of hemp which they wish to raise.

In Lincolnshire, where strong and heavy hemp is grown, the hemp-gardens are small, and near the houses of the growers. These gardens absorb vast quantities of manure, and produce hemp every year, without any alternation of the crop, or any change except that, in years when the hemp is pulled early, a few turnips are sown for a stubble crop. When the hemp is required for cordage, it should be sown in drills, as a stronger and coarser fibre will be produced.

When it is wanted for purposes of weaving, then broad-cast is the best method, as the stems rise more slender and fine in proportion to their proximity, provided they are not so near to each other as to choke

and impede the growth : there should never be a smaller interval than a foot between each plant. Three bushels of seed is the ordinary allowance for an acre, when sown broad-cast, this quantity being more or less, according to circumstances. If sown in drills, a bushel and a half is found sufficient. After the seed has been sown, great vigilance is required to keep off the birds. After this period, the hemp ground requires very little care or labour till it is fit for pulling. This plant is never overrun with weeds, but, on the contrary, has the remarkable property of destroying their vegetation.

Agriculturists sometimes take advantage of this well-known fact, and by sowing a crop or two of hemp on the rankest soils, they subdue all noxious weeds, and entirely cleanse the ground from these troublesome intruders. The male hemp comes to maturity three weeks or a month earlier than the female. It is known to be ripe by the flowers fading, the farina falling, and the stems turning partially yellow. This period is usually about thirteen or fourteen weeks after sowing. It is the frequent practice to pull these before they are quite ripe, for after having arrived at their full maturity, the fibres adhere so tenaciously to the reed as not to be readily separated without injury. The Suffolk cultivators gather both male and female plants at the same time, reserving a small part for seed. In Lincolnshire and on the Continent, they gather the male plant a month earlier than the female, and therefore small paths are made at intervals through the field, in order that the persons employed may pluck the plants which are ripe without trampling down those which are to remain.

The ripeness of the female hemp is known by the same indications as that of the male, and also by the calyx partially opening and its seed beginning to change colour. They are both less injured by pulling too soon than too late, but when very young, though the fibres are more flexible and fine, the ropes which are made with them are found not to be so lasting as when the plants are gathered in a more matured state. Hemp is never suffered to remain ungathered till the seed is perfectly ripe, as at this period the bark becomes woody, and so coarse that no subsequent process can reduce its fibres to a proper degree of fineness. Some plants should therefore be preserved for seed. These require no particular cultivation ; but the male hemp is likewise left rather longer than usual, that it may attain to maturity, and shed its farina upon the seed-bearing plant. Forty plants raised in the common way yielded only a pound and a half of seed, whereas from a single plant which grew by itself seven pounds and a half were obtained.

When the hemp is pulled it is taken up by the roots, and, before the plants are taken from the field, the leaves and flowers, and sometimes the roots, are taken off with a wooden sword; these are left on the ground,

as they greatly contribute to enrich it for the succeeding crop. The stalks are then arranged as nearly as possible in equal lengths, the root ends being all laid on the same side of each handful or bundle, which is then tied round with one of the stalks.

When the hemp is gathered, from which seed is to be preserved, it is exposed eight or ten days to the air, after which the heads are cut off and the seed thrashed and separated in the same manner as linseed. The processes to which the hemp is subjected before it is rendered marketable, and in a state fit for spinning, are very similar to those practised with flax. The same end is required to be attained—that of separating and cleansing the fibres from the woody and gummy matters which adhere to it, and the means used are therefore the same, the time and degree of each operation being proportionate to the different nature of the two fibres.

The heckles used for hemp are somewhat coarser than those for flax. The teeth of the coarsest are usually about an inch in circumference at bottom, diminishing gradually to a sharp point, and they are set about two inches apart from each other. The produce of an acre of land sown with this plant usually averages from four to five hundred-weight of cleansed hemp, and from sixteen to twenty-four bushels of seed. The culture of hemp is considered to be very profitable, and therefore, as we have observed when treating of flax, many attempts have been made to encourage its further growth in England; but a great prejudice formerly existed against this crop, and it was supposed to exhaust the land to such a degree, that many landowners inserted in the leases granted to their tenants covenants prohibiting its cultivation.

But under our present improved system of husbandry, and particularly with reference to the seed when made into compound, upon the same principle as linseed, to fatten cattle, its deteriorating effects would be entirely obviated. Hemp seed affords a very useful oil, similar in its qualities to linseed, and also cake, which is largely imported, with the refuse of other oleaginous plants, roots, and nuts, and sold to the farmers of this country under the new-fashioned name of feed-cake.

FIRST ANNUAL REPORT OF THE NATIONAL FLAX AND AGRICULTURAL IMPROVEMENT ASSOCIATION, READ BY MR. FARROW, HONORARY SECRETARY TO THE IPSWICH BRANCH, IN THE TEMPERANCE HALL OF THAT TOWN, ON FRIDAY, THE 6th OF DECEMBER, 1844. PRESIDENT,—THE RIGHT HON. LORD RENDLESHAM.

IN offering the First Report of this Association, your Committee would have to lament the general failure of the flax crop of the present year, were it not for the reflection that the failure itself was attributable solely to a dispensation of Providence, manifested in the protracted drought; solely, because in the preceding year several hundred acres of flax were grown in Norfolk, Suffolk, and other counties, which, from the continued rain, were, in most instances, too luxuriant. Taking, therefore, into account the superabundance of rain on the one hand, and the total want of it at the proper time on the other, it may reasonably be assumed that, upon the average of seasons, the soil and climate of England are well adapted to the growth of the important flax plant.

But in lamenting the loss of the fibre on account of the employment that it would have afforded, there is at least some cause for congratulation on account of the quantity and quality of linseed preserved; a circumstance of vast importance to the undertaking, seeing that, under present inexperience, the growers must mainly depend upon the seed for remuneration.

However divided opinions may be as to the establishment of flax culture through the fibre alone, the seed alone, or both, the advocates have abundant cause to exult in the fact, that linseed compounds are rapidly superseding foreign oil-cake to fatten cattle; and that the system of box-feeding and summer grazing is gradually extending in Norfolk, Suffolk, Essex, Dorsetshire, and other counties, ensuring a regular demand for linseed, such as will render it incumbent upon, if not absolutely necessary for the British farmer, to supply from his own resources. And as the seed cannot be obtained without the fibre, so must the double crop be secured; the linseed being placed to the farmer's account for fattening his cattle, and the fibre in juxtaposition with an unemployed population. Whether this fibre shall be used as litter, and converted into manure, or appropriated to the employment of the population, must be left to the common sense of the nation to decide; remembering that in 1840 alone 1,253,240 cwt. of flax were imported from Russia, Denmark, Prussia, Germany, Holland, Belgium,

France, Italy, Turkey, Gibraltar, Egypt, and Guernsey—that is to say, in

YEARS.	TONS.
1840	62,662
1841	67,368
1842	55,113
1843	62,662

Remembering also that between five and six millions were, each year, expended with foreigners for the raw material, which we, this day, give you ocular proof can be grown and prepared at home.

Management during the past Year.

In order to obtain the most accurate information respecting the treatment of the soil for receiving the seed, and the various processes for securing the crop, and for the preparation of the stalks, Mr. Brown, an experienced flax-grower of Norfolk, was engaged by the Ipswich Branch to afford practical instruction in the sowing department; Monsieur Francis, from Belgium, in that of harvesting the crop, and of preparing the fibre; and Hugh Elliot, from Ireland, as a general working assistant; the result of whose services is placed before you this day, as an earnest of future prospects; for if so much can be produced from an unfavourable season, greater benefits must arise from seasons more congenial.

The management of the soil and treatment of the crop in Norfolk being now generally understood, as the specimens upon the table bear ample testimony, one assistant only, Robert Twining, from Ireland, was engaged by the branches in that county. Several hundreds of men, women, and children, were employed during the busy seasons for managing the flax stalks; many of whom, through the above-named instructors, are in some degree able to become teachers themselves in the various processes connected with pulling, stooking, tying, stacking, thrashing, dressing, steeping, grassing, sorting, breaking, scutching, scraping, &c. &c. And here the attention of the philanthropist is directed to the fact, that, of the persons so employed, by far the major part consisted of the weaker hands; and that some hundreds of pounds were circulated amongst such persons as would otherwise have earned nothing.

Saving the Seed.

Those prejudices so long entertained in favour of steeping flax with the bolls, your Committee have the satisfaction of proving, by the numerous specimens produced this day, were founded upon ignorance of the proper management of the plant; an opinion which is confirmed

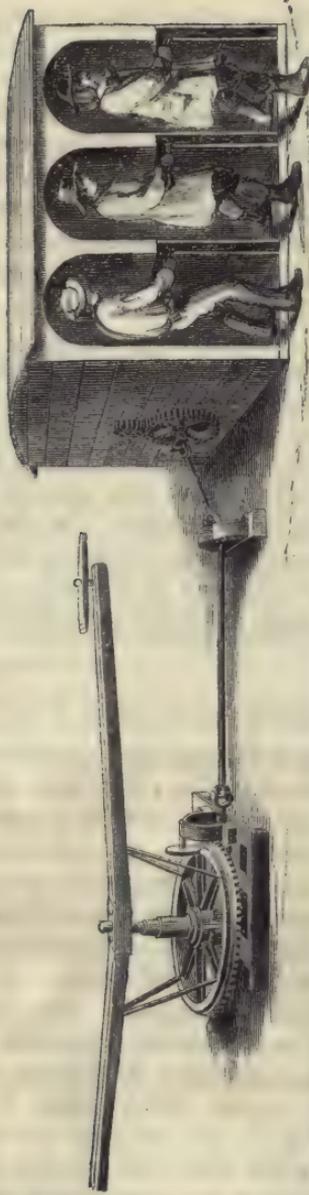
by the following extract from the recent Report of the Irish Flax Improvement Association:—

“ A prejudice had formerly prevailed against saving the seed, from an idea that it would injure the quality of the fibre. But almost everywhere through the country, this season, a large portion has been saved, and the flax has not been at all deteriorated. From fully one-sixth of the present crop the seed has been saved, and either used for feeding or sold for the oil-mills; the total value of which cannot be estimated at less than from 60 to 80,000 pounds. It is believed that in a few years all the seed of the Irish flax crop will be saved, and an addition thus made to the resources of the country amounting to nearly half a million per annum.”

The produce of seed in the counties of Norfolk, Suffolk, and Essex, exceeds any accounts extant, as the 32 bushels per acre, grown by Mr. Negus of Crimplasham, near Downham, Norfolk; with the crops of the Rev. T. C. Blair Warren, of Horkesley Hall; Mr. Pierson, of Framlingham; Mr. Bear, of Paston, &c., varying from 20 to 29 bushels per acre, most clearly demonstrate. In closing this part of their Report, your Committee refer to the above facts as indisputable evidences that both seed and fibre can be profitably secured; and that the contrary opinion, at least under the improved system, is nothing more than idle prejudice.

The exhausting effects of the Crop,

Or rather, your Committee would say, the restorative; for notwithstanding the outcry of its deteriorating effects upon land, the multitudinous instances to the contrary prove, that by a judicious introduction into the rotation of crops, flax improves the soil; and that tales from ancient writers upon this point tend only to deceive, as the following circumstance clearly corroborates:—Several members of the North Walsham Farmers' Club entered into a sweepstakes to produce, on the 19th of December, the greatest weight of turnips from a given quantity of land, without regard to soil or rotation. Mr. Playford, of Northrepps, selected a field that had produced an abundant crop of flax and linseed the previous year, and exceeded the highest weight of his competitors by 4 tons 15 cwt. Again, Mr. Atkinson, of Walcot, sold an acre of flax and seed for 13*l.* 7*s.* 6*d.* last year, and in the present had 64 bushels of barley from the same acre, without the application of manure. But the soundness of the above remarks will be seen by a comparison between flax and corn; the straw only of the latter being returned to the soil; while the seed of the former, being consumed by cattle, is diffused over the whole farm in the shape of manure.



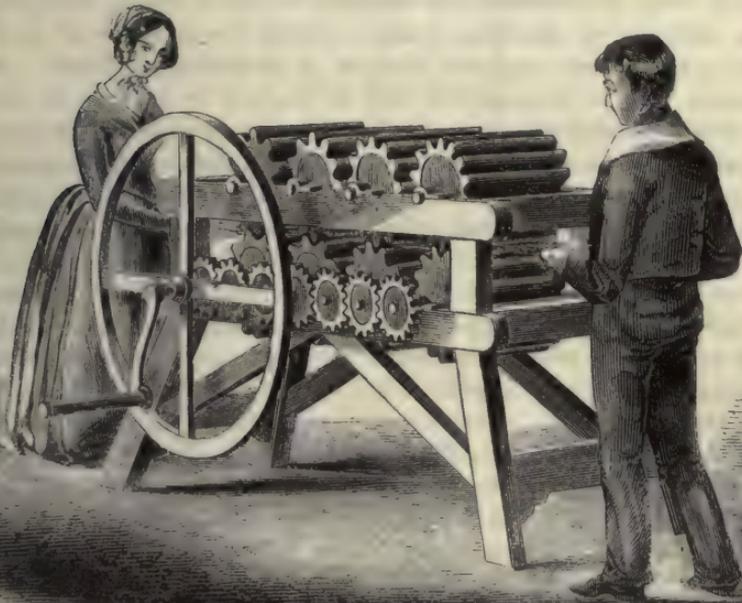
Scatching Mill, which with the Breaking Machine were invented by Mr. Warnes, and for which he received the Prize offered by the East Norfolk Agricultural Society in 1846.

Nor ought the chaff from the bolls and broken stalks from the fibre to be lost sight of, as they may be fairly set against the straw and chaff of other crops.

Machinery.

Through the instrumentality of the National Association your Committee have the gratification of recording the introduction of the first flax-scutching mill into England, and, at the same time, of the first portable one into the world; and also a breaking machine, which are described in the following extract from the Norwich papers:—

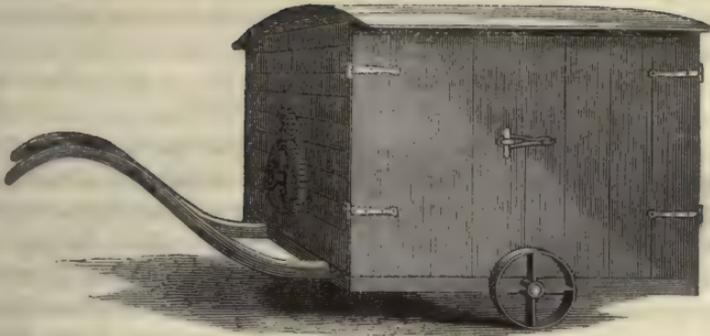
“*Flax.*—The exhibition of the scutching mill and breaking machine at Aylsham, last week, was numerously attended by gentlemen who take an interest in the cultivation and manufacture of this important plant. The mill resembles a small caravan or show, on opening the doors of which three recesses, not unlike sentry boxes, are seen. These are formed for the men to stand in while at work, and for their protection from the action of the swingles, which being placed upon an iron axle and set in motion, strike the flax at the rate of about twelve hundred times in a minute, the flax being held over boards placed perpendicularly and attached to the frame-work. The breaker consists of four



Flax-Breaking Machine.

pairs of fluted rollers, placed upon a strong frame of wood. To these cogged wheels are fixed, which being attached by a rigger and strap to the axle of the scutching mill, are set in motion by the same power. Through the flutes of the rollers, which revolve into each other, the flax is passed in small handfuls. The woody part is thus loosened from the fibre, and prepared for the scutching mill. The machines were worked by horses, but can be attached to water-mills, &c., or propelled by manual labour. The mechanism of both is simple, but the execution considerable. The Rev. James Bulwer kindly allowed the use of his barn, near the town, for the exhibition. At ten o'clock the operations commenced, and continued to attract attention till three. The trial was made with four sorts of flax. The first, very fine, grown by Mr. H. Soames, of Aylsham; the second, by the Right Hon. Lord Hastings; the third, by Mr. Smith, of Gunton; and the fourth, by Robert Marsham, Esq., of Stratton Strawless. The only stalks tested by time were two stones sent by Lord Hastings, which were broken in less than two minutes, and scutched in seventeen. The mill was made by Mr. Dyball, of North Walsham, and the breaker by Mr. Cubit, iron-founder, of the same place, under the personal superintendence of Mr. Warnes, who has thus improved upon the machinery which he inspected in Ireland, and evinced his unabated perseverance in the promotion of a cause which, if once established, must indisputably advance the agriculture and home commerce of this country."

The difficulty of obtaining funds to defray the expenses of hand-scutching by novices, suggested the idea of procuring machinery. A deputation was, in consequence, sent to Ireland to inspect the flax mills of that country, which resulted in the construction of the machines to which allusion has just been made. How far their establishment in England may be rendered permanent, it is impossible to predict. But one circumstance is worthy of notice, viz.—that an application has already been made by the Irish Flax Improvement Society, for the dimensions and other particulars of the portable scutching mill. We may therefore fearlessly foretel the great utility of such machines in the North of Ireland, where complaints are loud against the imperfect management of flax at the stationary mills; and also to the South, where the farmers are incapacitated for growing flax, by reason of having no mills to prepare the fibre for market. To the Flax Improvement Society of Ireland we are deeply indebted for our present advancement. The National Association would therefore rejoice, should the plan of our mill prove, in any degree, a return for favours often received.



Scutching Mill ready for Travelling.

Hand-scutching.

By the introduction of machinery, the Association is far from desiring to supplant the original design of dressing flax by hand: they are of opinion that the finer descriptions of flax ought not to be submitted to the operation of the mill, and strongly recommend the formation of schools for the instruction of youths in the art of hand scutching, sorting, and general management of the crop, at the Ipswich and other Depôts connected with our Association.

Hand-spinning.

In the desire to promote the spinning of linen yarn, no idea is entertained of successful competition with flax-spinning mills; the object being simply to introduce the wheel into Schools, Orphan Asylums, Magdalen Institutions, and amongst that part of our population which would earn nothing through any other means. For instance, the yarn spun by the child of seven years—by a blind woman—and that, now in the form of linen, by the children of fishermen, are all evidences of the utility of spinning, when, by reason of age, infirmity, and other causes, the parties would have been otherwise incapable of contributing towards their own maintenance.

But with respect to those finer qualities of hand-spun yarn for which our manufacturers of lace, muslin, lawn, cambric, &c. &c., pay many thousands every year to foreigners, and which, it is believed, from the peculiar nature of the fibre, that no machinery will ever be able to supersede—a wider field, for the establishment of a lucrative branch of business, is open. The Irish have already turned their attention to this point, are giving prizes for the best yarns, and establishing spinning schools, in one of which, under the patronage of Mr. Macartney, of Lissanore Castle, or Mr. Birknell, agent to the Mercers' Company,

twenty young women are now preparing to become teachers. Of these interesting accounts, the beautiful specimens of fine yarn before us, sent from the Sister Island, are confirmatory.

Information disseminated.

Every possible assistance has been afforded to the growers of flax during the past year, through the personal attendance of the Belgian and other competent instructors, as well as by the circulation of printed directions for the management of both seed and stalks. A copy of the extracts from ancient and modern authors on the flax crop, affording more information in a condensed form than could be obtained from any other work extant, was forwarded to each member of the National Association. This pamphlet was published at the request of the Right Hon. Lord Hastings, President of the West Norfolk branch; and when the remaining copies are sold, the expenses of printing to our Association will be trifling. The increasing spirit of inquiry respecting the operations of your Society is evinced by the sale of, and demand for, new editions of the Honorary Secretary's Works on the Cultivation of Flax, the Fattening of Cattle upon Native Produce, Box-feeding, and Summer grazing. The numerous inquiries from distant counties have all been answered by the public and private letters of our Honorary Secretary, by the correspondence of the Honorary Secretaries to the branches, and by the visits of Mr Brown, especially into Oxfordshire, the cost of which are not placed to the account of the National Association.

Factorship.

Your Committee are of opinion that the establishment of District Depôts for the reception and preparation of the growers' flax stalks under the control of Societies, would tend greatly to the permanent introduction of the crop. But when it is remembered that they must at first be mainly conducted by foreign instructors, the prospect of affording satisfaction to all parties would be doubtful. They are therefore disposed to think that the formation of a Joint Stock Company, with branches attached, to purchase the crops, would be the more effectual expedient.

That our wealthy spinners would form a conspicuous part of a Joint Stock Company, to encourage the native growth, can scarcely be doubted; because they now import flax to the amount of five or six millions a year; and are compelled to pay the exorbitant duty of forty and sixty per cent. to Foreign States, before they will re-admit it in the shape of yarn and linen.

It is worthy of observation, that the Messrs. Marshall of Leeds have,

near Antwerp, a large establishment for the preparation of flax, such as, if formed in every county of England, would at once ensure to the growers a ready market for their crops. Also, it ought to be remembered, that the above gentlemen were the earliest instigators to perseverance in our present undertakings, holding themselves in readiness to assist as circumstances may require. Other eminent spinners and flax agents in London, Liverpool, Belfast, &c., are watching our movements with a view to further our cause.

Mr. Demann, from Belgium, is extensively engaged in purchasing flax, and in preparing it with Belgian and English hands, at North Walsham. Through this means many youths have been, and are still being taught the art of hand-scutching. Mr. Brown, of Trimingham, and Mr. Harlee Playford, of North Repps, purchased several acres, and rivalled the Belgians themselves in the various arts of preparation. Mr. Farrow also, in conjunction with the Ipswich Branch, is working out a few acres by way of experiment, whose flax, under the superior handling of Monsieur Francis, merits the highest commendation.

Value of the Fibre.

Your Committee regret that they cannot at present offer any definite accounts of net profit upon this part of the crop, except that published by the Hon. W. R. Rous, who obtained a profit of 9*l.* 4*s.* clear of all expenses from an acre of land, exclusive of the seed. Mr. Demann avoids all disclosures of profit, and the gentlemen above referred to have as yet effected no sales of importance. But the statements relative to the flax crops in general may be considered highly satisfactory. Mr. Warnes has sold no flax at a less rate than 44*l.* per ton. At this price he has enabled certain twine-spinners, in the neighbourhood of Cromer and Lowestoft, to compete successfully with foreign hemp for the manufacture of fishing nets. In one particular instance, a sinking trade has not only been revived, but enlarged beyond its original extent, on account of the superiority of the flax twine, samples of which, with others of hemp, are now submitted to public inspection. Many thousand tons of hemp are annually consumed upon the coast, which, if superseded by native flax, a door would be opened to a new and lucrative branch of business. Mr. Warnes is sanguine upon this point, because he considers that an acre of good land will produce fifty stone of this description of flax upon the average of years, and twenty-two bushels of linseed; realizing, at 5*s.* 6*d.* per stone for the flax, and 6*s.* 3*d.* per bushel for the seed, 20*l.*, or, after deducting all expenses, from 7*l.* to 10*l.*

Mr. Barcham, of Antingham, had two tons fifteen cwt. of stalks, and twenty-two bushels of fine sowing seed, from an acre of land. The

former he sold at 3*l.* per ton, and part of the latter at 7*s.* 6*d.* per bushel, amounting altogether to above 15*l.* the common expenses of harvesting the crop and thrashing out the seed being only incurred. A long list of similar cases might be added did space permit.

Value of the seed.

Under this head it is impossible to offer an adequate estimate, because every account that has yet reached your Committee has invariably proved that linseed, formed into compounds, according to Mr. Warnes' system, surpasses every other for fattening cattle. The following extract, taken from the Norfolk papers, shows that the greatest pains have been taken to test the merits of native against foreign produce:—

“The North Walsham Farmers' Club offered, by a challenge through the Norwich and London Papers, to test the merits of the compound with oil-cake, which challenge not being accepted, Mr. Postle of Smallburgh determined to try the experiment upon his own premises. Twelve bullocks being selected, and divided into two lots by competent judges, were weighed and placed in separate yards; one lot to be fed on native produce at a fixed amount per week, and the other on foreign oil-cake at the same cost. Each lot to be allowed as many turnips, previously weighed, as they could eat per day, in order that the most accurate account, both of quantity and cost for food consumed, might be kept.

“During the course of the experiment, every facility was afforded the public to inspect the cattle and the new mode of grazing. In due time Mr. Postle advertised the day on which his bullocks were to be shown and weighed at Norwich. Numbers from distant parts came to see them, and, in order to arrive at the most correct conclusion, he sold all the twelve to one butcher.

“When first selected, the six beasts fed on compound weighed 602 stone, and those on oil-cake 590 stone. When fat, the live weight of the former was 725 stone; of the latter, 705 stone, being a difference of 8 stone (the 12 stone over-weight at the first being deducted) in favour of those fed on compound. But it was in the dead weight of each lot that the greatest difference was shown—the compound-fed yielding 44 stone 9 lbs. of meat more than those fed on oil-cake; but taking the loose fat and hides, the difference in favour of the former was 50 stone 6 lbs. or 38 stone 6 lbs.—deducting the 12 stone original extra live weight. While there is this increase of meat, there is a considerable decrease of expense between those fed on home produce, and those fed on foreign oil-cake. The former consumed a smaller quantity of turnips than the latter; and the cost of the compound was only 19*l.* 6*s.* 1½*d.*, whilst that of the oil-cake was 21*l.* 14*s.* 9*d.*

“The public are much indebted to Mr. Postle for the great care with which this experiment has been carried through, and for the pains taken to procure an accurate and satisfactory statement of the result.”

From the above experiment some idea may be formed of the *direct* advantages to be derived from the use of linseed. But no calculation can be made of the *indirect* advantages arising from fattening cattle upon native produce, nor from the diffusion of manure thus obtained, as every description of farm produce yields a heavier crop where manure from compound-fed cattle has been applied.

Finances.

The want of funds may be considered the only real cause of complaint; for, while the advancement in every other department has exceeded the anticipations of the most sanguine advocates, and astonished every attentive observer, the subscriptions have not been adequate to the expenditure of the year. The usefulness of the Society has, consequently, been greatly retarded. Much of the present and past years' crops of flax could not be prepared for the want of proper local establishments and instructors, and thus many hundreds of the poor were prevented from earning wages through that source of employment. For the correctness of this statement, your Committee need only refer to the present holders of flax, and to the numbers of persons employed in those parishes where the preparation of the fibre has been carried on. That a cause so truly patriotic should languish for want of funds, be subjected to cold neglect, and inconsiderate opposition, is deeply to be regretted; a cause that involves employment for the redundant population, and a remedy for the distresses of the people. At a time, too, when the unemployed poor are reduced to a state of wretchedness unparalleled in the history of this country; to alleviate which, expressions of the deepest anxiety pervade, not only the Councils of the State, but the discussions of Agricultural Meetings from one end of the kingdom to the other. The Legislature avow their inability to meet the difficulty; and every proposition to remove the prevailing distress, though emanating from the most influential and talented quarters, proves ineffectual.

Conclusion.

From the abundant materials placed before him, your Secretary drew up this report. It is submitted to the ordeal of the strictest scrutiny. The inquirer will discover that every attempt at exaggeration has been carefully avoided, and that many corroborative instances might have been added.

But, if the linseed and flax exhibited at the present meeting, with

cattle fattened upon native produce, fail to convince, then your Committee must observe, that proofs however clear, and arguments however forcible, would be unavailing. But they anticipate a happier result, because it is impossible for the Christian observer not to perceive that the hand of Providence has opened the doors of maintenance through the introduction of the flax crop. Upon us devolves the duty of rendering that crop subservient to the claims of the labouring classes; and, in proportion as that duty is performed, so will be the benefits derived. The sums required are extremely small compared to the magnitude of the undertaking. A mere per centage on the money annually raised for foreign charities, would suffice to find employment for thousands of our countrymen, and to secure to the cottager that peace and independence which can alone be obtained through constant work at adequate wages.

JOHN WARNES, Jun., Hon. Sec.

Trimingham, Norfolk, December, 1844.

A REMEDY FOR THE DISTRESSES OF THE CITY OF
NORWICH. ADDRESSED TO THE INHABITANTS.

IN offering this tract for your serious consideration, I avoid addressing any particular party; because the interests of every class of the community are involved in the subject of which it treats.

The affecting recitals of the deplorable state of your poor, at the recent meeting in the Guildhall;—the acknowledgment that no effectual relief could be afforded except by the introduction of new sources of employment;—the earnest expression of a hope that some remedial measures would be adopted;—the assurances of zealous co-operation in the establishment of new branches of business;—and my own persuasion that the Linen Trade, with its numerous ramifications, would meet every difficulty; impel me no longer to defer the renewal of the propositions contained in my Letter addressed* to the Citizens of Norwich, fifteen months ago. I annex that letter, because the opinions I then formed have undergone no change; and because careful investigation has only confirmed the soundness of the arguments therein contained.

In addition to my former suggestions, I now propose the erection of a Flax-spinning Mill that would employ many hundreds of persons of all ages, and thus render success doubly sure.

By those who have never bestowed five minutes' consideration upon the subject, my plans may be pronounced presumptuous and chimerical. But it ought to be remembered, that they emanate from five years of practical research, of which the two last had especial reference to the peculiar circumstances of Norwich. Opportunities have long been afforded me of acquiring information as to the real condition of the unfortunate operatives. But I refrain from particularizing cases of distress as incentives to effort; experience having proved that such recitals, oft repeated, harden rather than soften the heart.

The public papers have exposed the horrors consequent upon the want of employment and of adequate wages, in terms too authentic to be disputed, and in colours too vivid to be forgotten. To the speeches of the mayor and other gentlemen at the late meeting, and to the statements of Mr. Johnson in particular, I refer as proofs; 1st, that Norwich has been for years, and is now, in a worse state than any other manufacturing town in England: and 2ndly, as overtures, though indirect, to submit the merits of my proposed remedy to the ordeal of a searching inquiry—an inquiry, which I claim upon the grounds of

* See No. 7, page 169.

the philanthropic professions made upon that occasion ; and also, upon those fundamental principles of Christianity which enjoin the duty of bearing, of hoping, and of believing all things.

The deepest anxiety to ameliorate the condition of their suffering neighbours, is also expressed by every class of society in the city. Private assemblies and public congregations have long invoked the aid of the Deity, and all parties seem disposed to merge their differences in one common effort to emancipate the operatives from their present degraded state. But how to obtain this desideratum remains a problem that the most ardent inquirer has failed to solve.

Consider, therefore, dispassionately, whether the Linen Trade is not the answer, vouchsafed by Providence, to many prayers ?

To your hope and charity add faith ; and be not like the disciples of our Lord, who, while engaged in fervent supplications for the deliverance of Peter, charged with madness the messenger who conveyed the happy tidings of his safe arrival !

550 lbs. of dressed flax will produce 16,500 hanks of yarn, or 210 webs of cambric pocket handkerchiefs, each web containing 5 dozen, at 2*l.* 10*s.* per doz. ; employing for about 12 months 158 female spinners, 40 hem-stitchers or veiners, and 18 weavers, whose wages at the present time in Ireland amount to 2,195*l.*, while the cost for the raw material is only 75*l.*, leaving a balance of 354*l.* in favour of the manufacturer, and affording a larger amount of wages, and of profit from so small an outlay, than can be derived from any other source ; therefore, those hopes, so admirably expressed by Mr. Towler, are easy of realization, and centre in the manufacture of linen : “ A trade, not of a fleeting character,” but permanent as time itself, and one in which the principal “ part of the production is the labour of men.” Can any thing be more congenial to the wishes of that gentleman, than the introduction of this prolific branch of business ? or to those enlarged and generous views of Mr. Gurney, who observed, that “ He would do any thing in his power to introduce the manufacture of new fabrics into the city, and to promote enterprise, and the application of capital to the legitimate employment of the inhabitants.”

The manufacture of linen is attended by more than twenty sources of employment for the human hand, independent of field labour. “ The Mule and Iron Man ” cannot in this, as in cotton manufactures, displace the hand-loom weaver. The services of both youth and age are appreciated ; and the ingenious find ample scope for the exercise of their skill, in the varied departments of the Heckling-rooms and Spinning-mill—the Store-houses and Factory—the Boiling-house and Bleaching grounds—until the Lapper decorates his web with golden leaf. This last operation gives the finishing stroke to that new and permanent branch of business, which, if once introduced, would, I repeat, find

employment for your redundant population, profitable investment for capital, and be the means of renovating trade, and of restoring prosperity to the city.

That individual wealth and enterprise could accomplish this vast good I have no doubt, because many opulent and indefatigable manufacturers of the North employ, it is said, more hands than could be obtained at the Norwich labour-market—the market to which your own manufacturers resort, and by which they regulate the rate of wages. This Mr. Willett clearly and candidly explained. “The first thing,” he observed, “was to have all the people employed, and the natural consequence would follow of a higher rate of wages; but if there were more operatives than were required, wages would fall.”

It is evident that the present depressed state of Norwich is mainly attributable to the low rate at which the working classes are paid. It is also evident that, until the labour-market is cleared of surplus hands, it will be impossible to remedy the evil. Therefore, it becomes the duty, as well as the interest of every inhabitant, to find employment for the redundant population.

But, as it cannot be expected that any individual of sufficient wealth, zeal, and devotion, would embark in such an undertaking, I propose, as the only alternative, that a Linen Company, embracing the spinning, weaving, and bleaching departments of the trade, be formed, and supported for three or four years by the voluntary contributions of a philanthropic public. The Company to erect the Spinning-mills, Boiling-house, Machinery, &c. &c., and find Capital for purchasing Stock, payment of Wages, &c. The voluntary fund to be appropriated to the defrayment of all expenses consequent upon instruction, altering of hand-loom, inexperience, &c. &c.

Thus protected from loss through incidental expenses, moneyed parties would come forward, and the Linen Trade be established; or some opulent spinner might be induced by a guarantee of five hundred a year, for four years, to open a branch to his business in the city, and thus by the payment of only one shilling each from the 10,000 rate-payers originally assessed, the Norwich operatives may be emancipated from their worse than Egyptian bondage.

Were I able to state the amount of money required, either to support or to conduct the various branches in question, it would, at present, be unnecessary; but my desire is to induce, through the medium of this Tract, a searching inquiry, from which, I am confident, the happiest results would flow.

I will, however, observe, that the number of surplus hands is by no means so great as imagination depicts; that the sums required to employ them, in the way proposed, are comparatively trifling; that there

are no real obstacles; and that nothing is wanted to insure success but unity, upon the ground of our common Christianity.

The performance of an imperative duty would preclude regret even in the case of failure; but it is impossible that profit should not be obtained; for employment lessens rates, and increases the value of every description of property. Therefore, the introduction of the Linen Trade into Norwich would be profitable to the people, by providing them with work at adequate wages; profitable to the householder, by reducing poor rates; and profitable to the tradesman by the increased consumption of all the common necessaries of life.

For the Butcher, the Baker, and the Grocer, the Draper, the Shoemaker, and the Tailor, would all experience an *increase* of custom, with a *decrease* of rates; while the value of real property would be proportionably advanced. So indisputable is the fact, that inadequate wages lower profits, create expenses, and inflict upon trade a double blow. Nor ought the minor craftsmen, who depend solely upon the operatives, to be forgotten, as the following case demonstrates: About fifteen months ago, one of the weavers sent to Trimmingham to learn the art of flax-dressing, had nine children. His eldest daughter was married to a Tailor, and one of his sons was a Shoemaker, both of whom were in danger of becoming parish charges, on account of the inability of the operatives to purchase either shoes or clothes. Similarly circumstanced are all small tradesmen whose subsistence depends upon the working classes. Hence it will be seen that when the operatives are in adversity, all the dependent branches of trade suffer with them. These are innumerable; therefore, I repeat, it ought to be our care to support the main stem, which is the operative, and then we may be sure that all the depending branches will flourish with it. Many of your once prosperous population are living upon a scanty supply of provisions, and therefore consume but little farm-produce. Could their circumstances be reversed, Norfolk would derive proportionable advantages; and any plans adopted for the benefit of Norwich, the Landowners and Agriculturists would doubtless consider it their interest and duty to support.

In conclusion, I cannot avoid expressing my belief, that this tract will be perused with attention; and that those, at least, who have the welfare of the city at heart, will not be slow to institute an inquiry into the soundness of my propositions, nor in adopting vigorous measures for carrying them out.

I hope that none will be turned aside from the performance of this good work, either on account of their want of information upon the subject, or through the suggestions of parties interested in prolonging the depression of the labour-market. A little help is worth more than a world of pity. Remember also that the way of Providence has ever

been to produce the greatest results from the smallest beginnings; and that He chooses, as his instruments, "The weak things of the world," to bring about his great designs; in order that "The excellency of the power might be of God and not of Man."

I have the honour to remain,

Your obedient and faithful servant,

JOHN WARNES, Jun.

Trimingham, April 5th, 1845.

NOTE.

A THOUSAND copies of this tract were circulated, principally amongst the most influential parties in the city.

Soon after, a deputation was sent by Joseph John Gurney, Esq., of Earlham Hall, to Leeds for the purpose of collecting information on the subject; and several new and expensive looms, with other machinery, were in consequence, erected.

Thus, at the sole expense of the above named gentleman, the linen trade was introduced into Norwich. But, through the apathy of those intrusted with the management of the business, success is for the present retarded.

I inspected this incipient establishment myself, and am convinced that nothing is required but a zealous and patriotic co-operation to insure the realization of the benefits comprised in Mr. Gurney's philanthropic design.

FLAX SPINNERS AND AGENTS OF ENGLAND.

Leeds.

1. Messrs. Marshalls
2. „ Benyon & Co.
3. „ Hives & Atkinson
4. „ Hargrave, Brothers,
& Co.
5. „ E. & J. Tatham
6. „ McCrea & Marshall
7. „ Wilkinsons
8. „ Holeworths
9. „ Titley, Tatham, &
Walker
10. „ Brown & Co.
11. „ Boyle & Gill
12. „ Mark Walker &
Sons
13. „ John Margitt
14. „ Wm. Hill & Co.
15. „ Wm. Hill & Co.
16. „ Alfred Cannon & Co.
17. „ Sale, Cannon, & Co.
18. Mr. Peter Fairbairn, Ma-
chine-maker

Ripon.

Messrs. J. & G. Metcalf, Pately
Bridge

Manchester.

1. Mr. John Brooks
2. Messrs. Wm. Renshaw & Co.

Manchester—continued.

3. Messrs. Kays & Sons
4. „ Higginson, Machine-
Makers

Preston.

1. Messrs. Paley & Sons
2. „ Newham & Co.
3. „ Dewhurst & Co.
4. „ Spicer, Buxton, &
Co.
5. „ German, Petty, & Co.
6. „ Hinckman & Furness

Kirkman.

Messrs. Bailey & Sons

Bentham.

Messrs. Hornby & Roughsedge

Liverpool.

1. Mr. Wm. Winn
2. Messrs. Horner & Bell
3. „ Fletcher & Co.
4. „ Hugh & Joseph
Hornby

Whitehaven.

Messrs. Joseph Bell & Co.

Wigan.

Messrs. Rylands & Sons

Yealand-Burton.

Messrs. Waithman & Co.

IRISH FLAX AND TOW SPINNERS.

Belfast.

Andrew Mulholland and Son
 S. K. Mulholland and Hinds
 John Murphy and Co.
 James Bromer and Co.
 Forsythe and Orr
 W. J. Moore
 Hull, Wilson, and Co.
 James Montgomery and Son
 Stewart and McClelland
 *Thomas Churnside and Co.
 Robert Thompson and Co.
 Daniel McCarty
 William Mulholland
 Falls, Mill, and Co.
 John Boyd and Co.
 A. W. Craig
 John Fisher and Co.
 J. and J. Herdman and Co.
 James Kennedy and Son
 Robert McKibbin
 *William Ewart and Son
 *Robert Gunning and Co.
 James Murray
 Daniel Morgan

Whitehouse.

James Grimshaw and Son
 Balls and Calvert
 Monkstown Spinning Co.
 Edmund Grimshaw

Whiteabbey.

William Cowan and Co.

Carrickfergus.

R. and A. Gamble

William Walker
 Wood and Dobson
 James Patterson

Broughshane

A. and J. Davison

Ballymoney.

C. and G. Allen

Ballyclare

Lyle and Little

Doagh.

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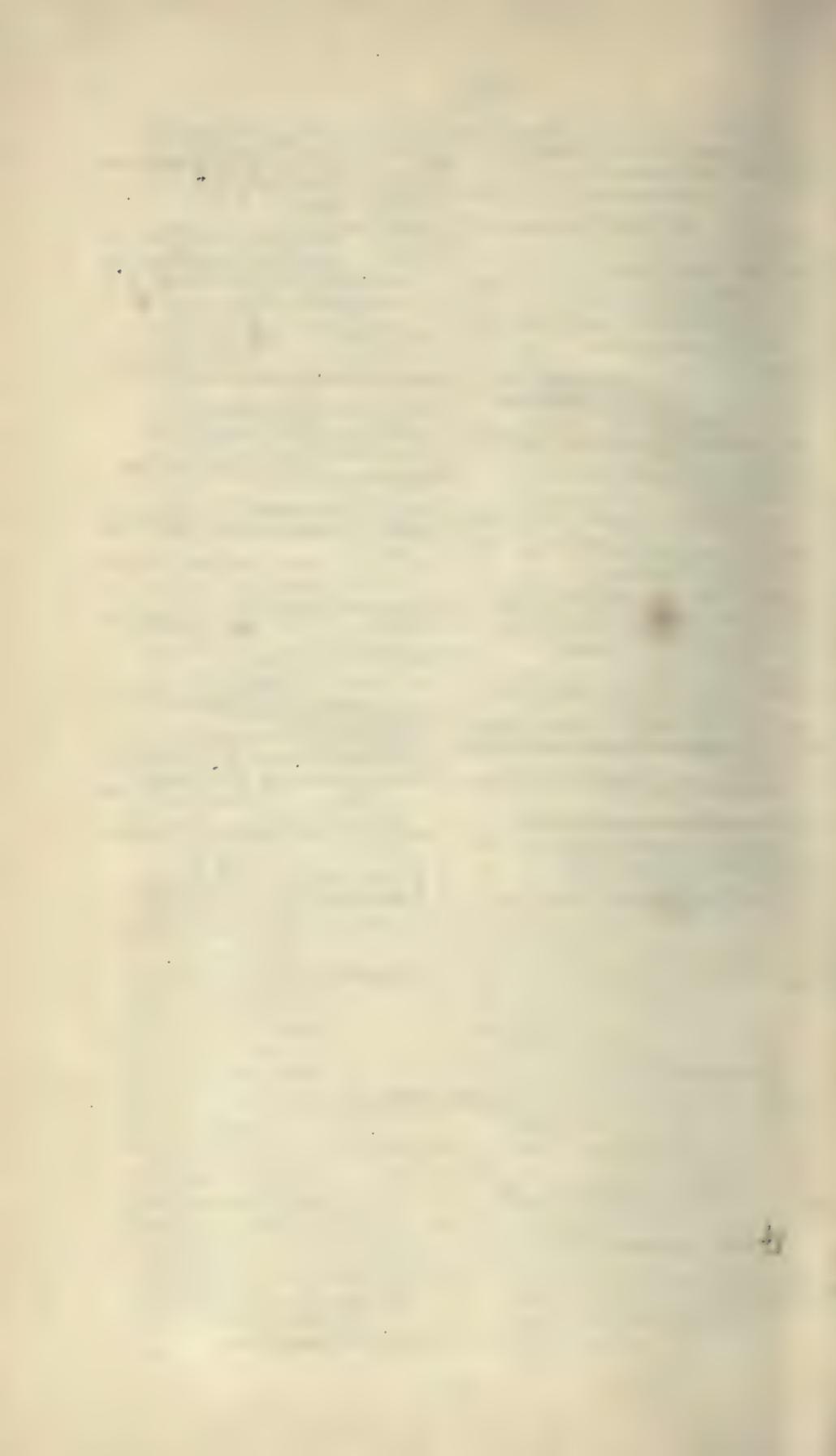
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