

THE SOCIAL STATE
OF
GREAT BRITAIN AND IRELAND
CONSIDERED,
WITH REGARD TO THE
LABOURING POPULATION,
&c. &c.

DEDICATED BY PERMISSION TO
HER ROYAL HIGHNESS THE DUCHESS OF KENT.

BY THOMAS BERMINGHAM, Esq.

OF CARAMANA, KILCONNEL, COUNTY GALWAY, IRELAND.

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TO HER ROYAL HIGHNESS
THE DUCHESS OF KENT.

MADAM,

That I am permitted to place the following pages before your Royal Highness, is a most gratifying proof of the interest you take in the humblest endeavours to promote the welfare of Ireland.

Notwithstanding the still distracted state of that island, I trust that if your Royal Highness and the Princess Victoria should fulfil the hopes of my loyal countrymen by visiting their shores, you will see the dawn of a brighter era, when party spirit and religious animosities shall give

way to a spirit of peace and co-operation in good works, and when the activity of the national character being rightly directed and duly exercised, shall ensure the improvement of all classes of society.

I have the honor to subscribe myself,

MADAM,

Your Royal Highness'

most dutiful and grateful **Servant,**

THO^s. BERMINGHAM.

London,

5th March, 1835.

MAP of IRELAND,

Showing

THE CAPABILITY OF IMPROVEMENT OF
INLAND NAVIGATION,

As proposed in Mr. Harcourt's Report.



Scale

ADDRESS TO THE PUBLIC.

MY object in putting forward (at this time in particular,) the following statement, is an anxious desire to arouse the government and influential portion of these kingdoms *to a sense of the situation of the working classes throughout the length and breadth of the land.*

So much has been stated of the general distress of this important body, that I believe *that* point is conceded on all hands. The task then is to show how *that* distress may be relieved, either totally or in part, and above all to prevent its recurrence.

That there is nothing new under the sun may be true in a general sense, but of new to each individual there is an inexhaustible store. With much labour and infinite expense volumes are annually published by parliament, then laid on the shelf, where their valuable contents remain like a light under a bushel. I have at some pains collected from these and other like documents, matter which bears out my particular views as to the best means of effecting a cure for those evils.

If the public should be inclined to go along with me, (the field I have entered on being a wide one,) I

mean to go on gleaning more and more, and still much will be left for others, should a laudable zeal induce them to tread in the same path.

I am aware, what an enlightened friend has often told me, that in most minds vast is called visionary, and enlarged views are often looked upon as castles in the air.

I am further told "that the poor are never to cease off the land."

A person who talks *only* of vast and extensive plans and yet never by actual experiment proves, on a small scale, that which he advocates as useful on a great scale, is, I admit, a visionary.

I trust I can show that I have in practice proved, or ascertained the utility of those measures I recommend for general adoption, in various localities. I have not given my own views and experience alone, but have collected, from sources within my reach, the opinions of the best informed men of the present time on the subject.

I cannot enlighten the public on the theory of capital and population, of the necessity of balancing one against the other. I have no doubt a vast deal of good may be derived from such studies, and that the science is one of the deepest importance, I am free to admit. But my object is to shew that however difficult it may be, in after ages, to provide for the numbers that may be then alive, we have sufficient

means of providing for those who now exist, and who are and ought to be the subjects of our exertions and solicitude, leaving it to a future generation to adopt *their* measures to exigencies, which, after all, we can but vaguely conjecture.

One or two parishes find that with a little care and attention poor rates are reduced more than one-third, indeed nearly one-half—that the labourers, when in employment, do better work ; in two ways a direct benefit : therefore, in these places I conceive the capital of the landlord and farmer is increased. Thus when rates, as at Ruislip, have been reduced from 1,900*l.* a year to 1,100*l.* (in one year, *mark*,) calculating at 4 per cent., 20,000*l.* capital has been added to the landed interest in that one parish, of about 6,000 acres.

The parish of Mary-le-bone 11,000*l.* a year saved, is equal to a capital of 275,000*l.*; and Great Missenden, in Buckinghamshire, where 700*l.* a year is saved, the capital is 17,500*l.*: now these are no trifling sums, and I am equally assured that these parishes may go on reducing and reducing, until they find their expenses for the poor a mere *trifle*.

But it may be said that much of this money has been saved by refusing relief to those persons not exactly belonging to their parish, but who used to get relief heretofore, and who now get aid elsewhere ; thus the amount saved in such parishes must be

added to others, and the grand total to the country will remain nearly the same.

I believe this to be partly true, but still the object is gained locally : let each parish in England act thus, and then deserving objects will alone be relieved. I will suppose this done universally in England and Wales, and what remains?—that the unprovided poor are confined to Ireland.

I venture then to offer my views for the improvement of the Sister Isle. I shall endeavour to shew, that these improvements in the administration of the poor laws will add considerably to the capital of the proprietors of the soil in England, and leave in their hands ample means to assist in providing profitable employment for the Irish at home.

The Report of the Poor Law Commissioners, dated 21st February, 1834, shews that in the year ending 25th of March, 1832, a sum of 7,036,968*l.* was collected as poor rates—what an enormous tax on the industry of the country !!! here however is a revenue capable of effecting vast improvements, if a wise government shall turn it to useful purposes. At the same time that reform in this expenditure is necessary and is about being carried into effect, through the instrumentality of the bill of last sessions, let it be done humanely. I have just received the following statement from Captain Brenton of the Royal Navy, who is a guardian of the poor in the parish of St. Mary-le-bone.

	£	s.	d.
Workhouse expenditure for 1833	- 49,030	7	5
Same for 1834 - - -	- 37,539	16	6
Difference in favor of 1834	- 11,490	10	11

Given in aid to out-door poor in 1833 to 7,042 persons, whilst in 1834, 4,035 only were relieved.

Note.—I have reason to believe from some returns shewn to me, particularly one from Mary-le-bone, that the plan now generally adopted of *refusing all relief to the Irish casual poor, except what will just pay their passage from the next port, home, is a main cause in many places of reducing the rates: surely if this is the case, and I do not doubt it, the English nation will, for their own sakes, endeavour to find out, and assist in forwarding plans by which these poor people may obtain employment and comfortable homes in their own country.*

With regard to *Home Colonies*, or, in other words, land, whether waste or commons, or even profitable land taken up to place the poor thereon, I instance the experiments on King William's Town, by the Board of Works, from which report I have extracted largely.

The Colonies of Castle-Sampson and Iskerbane, in County Roscommon, an account of which I attach to this.

I have also put forward a memorial to government on the subject, which was passed as a resolution lately, at Exeter Hall, and handed to the chairman of the meeting, Sir D. Barry, who supports and approves of the plan.*

In support of my plan, of land for the poor, both as to small allotments for the labourers, and farms to be attached to workhouses; the following, taken from the Appendix to the report of the Poor Law Commissioners, under the head of *Foreign Communications*, will, I think, be found highly interesting. Count Arrezabane, in a letter to Mr. N. W. Senior, says, relative to the Peasantry in Belgium—

If I was required to make a comparison from some knowledge of the peasantry of England and Belgium, acquired during a period of four years' residence in England, and seven in Belgium, spent principally in the country parts; I would say, that in that portion of England where great abuse in the administration of the poor laws has not crept in, the sum of the substantial and intellectual enjoyments of the labourer, is of a higher grade than in Belgium; and that the state of morals are nearly the same in both countries; but, on the contrary, where abuses in their administration have been allowed, there, where the

* Sir D. Barry has seen much of Ireland, whilst on the medical commission, therefore his approval of the measure is most important in my mind.

labouring classes are entitled to share in the poor tax, although the sum total of the substantial enjoyments of these latter, may be superior to the same class in Belgium, although these may be better housed, better fed, better clothed, than the same class in Belgium, yet their moral feeling is inferior; they seem always discontented with their lot, whilst the labourer in Belgium hardly ever complains.

It is certain that a greater number of the *labouring classes in Belgium possess a house and a garden, and rent a field than in England*, and we know that the possession of the smallest portion of the soil—of having something under the sun which we can call our own is a source of gratification, (the value of which cannot be estimated in pounds, shillings and pence) and constitutes, at the same time, a great element of order in the social state. The condition of the Belgium labourer is in general the result of the natural order of things, (in the absence of poor laws) and the particular circumstances with which he may be surrounded. In Belgium, whether married or single, a large family, a small one, or none, the wages of the labourer has no regard to them; the industrious hard-working man is better paid than the idler—he, who is over-burthened with a family, is poorer than he who has fewer children—he, whose conduct is bad, suffers more privation than the man of good character; good and evil, is within the reach of all, and voluntary charity has free scope to redress,

and mitigate all that is possible, the miseries of the unfortunate.

Captain Brandreth, in his report on the agricultural colonies of Belgium, in the same appendix, gives a detailed account of *Frederick Oord*, founded by the benevolent society of Holland, and also of *Wortel, near Antwerp*. The information which he gives on this subject will be found highly useful; and, although, on the whole, he does not draw so satisfactory a conclusion from their success, as greatly to encourage the system elsewhere; yet, as with respect to *Wortel* colony, he has given data, from which we may gather information for ourselves, I think it useful to give a short summary of the accounts of that institution. I am the more desirous to do so, as I think it bears me out in my opinion, that agriculture is the best employment for our paupers. *Wortel farm*, a barren heath, near Antwerp, containing about 2,200 acres, was colonised in 1822, with a view to place mendicants in a situation to provide for themselves. The entire expense, purchase of land, erection of building, clearing land, administration of the establishment, clothing and furniture, provisions and general maintenance, purchase of cattle and houses, and ordinary cultivation, manure, planting, day labour, miscellaneous expense, fire insurance, &c. &c. from the year 1822 to 1831, amounted to 1,256,222 florins; general receipts from the colonies, 439,045 florins; difference, 817,177 florins; which at 20*d.* to

the florin, amounts to about 68,098*l.* To which add arrears of interest on loans, 4,000*l.* Creditors for the direction of the colony, 4,000*l.* Total expense over receipts from the colonies, 76,098*l.* Deduct, value of the colonies, land, buildings, cattle, furniture, taken in 1822, 42,604*l.* Remains against the colonies, 33,494*l.*

Let us examine this statement : here is the amount of the deficiency in ten years. But in these years I find free colonists supported, amounting to no fewer (if we suppose them to have been congregated in one year) than the number of 4923 persons, whilst mendicants in same manner would amount to 4775, making together 9698 ; being 3*l.* 10*s.* to each individual.

What parish in London supports its poor for three or four-fold this sum? here then, so far from admitting a failure, I say, *let us go and do likewise.*

I have calculated every sum laid out from whatsoever source derived, though the receipts for carrying on the concern proceeded from—

1st.—The result of agreements with several public hospitals and establishments for families and orphans.

2nd.—The amount of voluntary subscriptions and presents and loans.

3rd.—Grant, paid annually by government for the relief of 1000 mendicants.

4th.—Produce of the colonies, sale of cattle.

The actual state of the concern, in 1832, a period

of ten years from its commencement, after allowing for these aids, is as follows :

Its debt - - - -	-	63,750
Value of the property in 1832	-	42,604
		<hr/>
Difference against the colony	-	£ 21,146

It is worthy of remark, that the value of the agricultural produce of this poor barren heath, from the labour of the paupers for these ten years, is stated at about 167,770 florins ; equal to 14,000*l*.

This I reckon most important, as shewing what may be made from like soil with us. *I think it must be admitted, that this sum is clear gain to society, as with us, more than that sum added to the rate per head already stated, would have been spent on the paupers here, without any return whatever* ; we must also consider, that when the experiment was in its infancy, much money was probably wasted ; it also appears, from the judicious remarks of Captain Brandreth, that many things were done which experience shews might have been better done, or which should have been entirely avoided.

At the commencement of the colonies, the colonists are so distributed that each division contains a shoemaker, tailor, and stocking-knitter, linen-seamsters, woollen-seamsters, a weaver, carpenters, masons, blacksmiths, hatters. But as *field labour* is the chief object, most of these trades are merely intended to provide for the consumption of the colonists, without

injury to the existing trades. The single exception to this rule, and it occurs only in very particular circumstances, is the spinning of flax, which is converted into linen, and delivered to those friends of the society, who have subscribed for it; the raw material being bought, until the improvement of the soil admits of its being cultivated in the colony. Besides these kinds of labour, there are others, such as brick-making, lime-burning, the cultivation of land for new colonies, grass growing, cutting of turf for sale, &c. forming additional sources of income to the colonists.

Would it not be desirable that land was taken in this way by the *London and other parishes*, and good plain buildings erected thereon, a proper governor and his wife appointed to see that all able to do work are employed, making their clothes, tilling their gardens, rearing poultry, brewing their beer, and fattening hogs? That many would be unable to work, either very old, very young, or infirm, there is no question, but there is little doubt that a sufficient number would be found able to cultivate the farm; the produce from which ought, if properly managed, to support or nearly so, the entire establishment, and thus reduce the rates to a mere nothing. There then might be established the parish school of industry. There then the idle would be watched, made to work, and the vicious thereby probably reclaimed from their evil courses; land might be purchased by different

parishes lying together, so as to be superintended by the same governor. Now that rail-roads are about being made in various directions from the metropolis, and canals already made, the greatest facilities will be found to exist for removing paupers to the country. Whenever employment offered for any of the inmates, they could at once leave the farm, and probably with a good character, obtained whilst there.

The experiment at Hackney Wick, by the *Children's Friend Society*, is conclusive as to the advantage of spade husbandry for boys. There every sort of care is taken regarding their health and morals. Whether these unfortunate children shall become useful members of society, or shall be fitted for the gallows or the hulks, depends mainly on, whether they shall be nurtured in vices inherent to a great city, or sent out to cultivate Wimbledon Common, or Epping Forest.* It is necessary to visit this establishment to be satisfied *how much may be made of a stubborn soil, by a stubborn spirit*, with due care and kindness. I have scarcely anywhere seen a finer set of boys, nor anywhere more comfort or apparent happiness. How is it that the example of Captain Brenton (the father of the institution) and those other worthy and exalted personages, who have joined in this admirable work, is not more followed? I am happy to

* See the remarks in the Morning Chronicle, of the 30th of January, on the produce from the cultivation of Bagshot Heath.

say, that there are experiments making to test the benefit of *agricultural schools*, one having commenced at Ealing, in Middlesex, where boys are taught gardening and other useful branches, and the elements of the science of agriculture, &c. &c. &c. Mr. Craig, the master, has long been engaged in training persons to proper habits of industry,—youths as well as adults. He has lately been to De Fellenbergs, at Hofwyl, where he has gained much additional practical knowledge. Mr. Cropper, of Liverpool, has formed a school on a similar plan at Warrington, having also travelled to Switzerland, in pursuit of the necessary information.*

I hope that these seminaries may be the means of spreading the plan throughout England. Some boys are dayscholars, and some boarders; the boarders are intended to be brought up as teachers of the system, and without exception, it seems to me the best mode of giving instruction that I am acquainted with—would that I could see a school of the kind attached to each workhouse; and that placed on a farm in every parish in England. Youths well recommended, intended as teachers hereafter, will be taken into

* Any person desirous of establishing schools of this kind would do well to consult “On the Education of the Peasantry of England,” by Baldwin F. Duppa, Barrister at Law, to be had at Knight’s, and Mr. Cropper’s pamphlet. The former as well as the latter of these gentlemen can speak from personal observation of the foreign institutions on these principles.

Ealing seminary as boarders, and clothed for 15*l.* a year. It is an admirable place for training an active well-disposed lad to habits of usefulness, and to a sense of his responsibilities as a member of society.

I have reason to know that the *allotment system* is working well in filling up spare time of labourers in the country parishes. I have hopes that land will be allotted to the Irish who may not now have sufficient, for in Ireland, the employment being almost entirely agriculture, the poor require several acres to make them independent.

The statement just now submitted by me at a meeting at Exeter Hall, which I attach to this publication, will, I hope, be successful, as one certain mode of improving the condition of a large number of poor in Ireland, who are now without any resource ; and I trust my appeal to the government will not be in vain.

In the *parish of Ruislip, in Middlesex*, which I visited with my worthy friend, John Hull, of Hillingdon, two years ago, I find rates, as I have stated, reduced from 1,900*l.* the amount in 1833, to 1,100*l.* a year, the amount in 1834, principally from the exertions of Mr. C. K. Fountain, who has put the workhouse under the care of proper persons ; the land attached to it being cultivated by

the inmates capable of working. Much good has been effected there through the instrumentality of a LOAN FUND, on the plan recommended by the Rev. Francis Trench, in an able pamphlet, to be had at Ridgway's, Piccadilly. Mr. Fountain says, that many able-bodied labourers have been kept from the workhouse, and that with a very small capital, not more than 30*l.*; some have been helped to a cart, an ass, or car wheels when the old ones have been worn out. Mr. Fountain says it is impossible to speak too highly of the loan fund; many are taken even out of the workhouse by a small temporary loan. At first the poor would not borrow, thinking to get as much from the overseer, but finding that to be impossible, they cheerfully come for the loan. Mr. F. discontinued all out labour; he distributes bread to any able-bodied labourer in search of work, perhaps once or twice; then, if he applies again, he is sent into the workhouse, and as he knows when he gets there that he must labour for plain but wholesome diet, he seeks employment out of it; when once in employment he tries to keep it by doing fair work: thus both parties are benefited, employer and employed, and the parish saved a great burthen. The practice of giving relief on certain days, in money, being given up, the *beer shops* are nearly deserted. The rector and his lady assist in these plans, and in attending a school on the British system, by and bye they hope to get funds for a larger school room, and intend to get a piece of land

near the school, to enable the master to teach the practice as well as theory of gardening and agriculture, pursuant to the plan recommended by Mr. John Hull, of Hillingdon, which I have much pleasure in attaching to these statements.

In short, Mr. Fountain expresses himself to me thus:—"now without any help from the new poor law commissioners, without recurring to the new poor law bill, but simply by acting up to the spirit of the old, the parish is completely changed, the really deserving poor are taken proper care of, the able-bodied labourer is assisted to earn his livelihood in an honest way, and the rates so much reduced, that they are easily collected, and without the aid of the constable. The poor are now thankful for what they get, and polite to the overseer, which was far from being the case before; and all parties are so much pleased that they have offered to subscribe for the purchase of a piece of plate for me." I confess however I should much prefer that a more substantial token was offered, namely *a reduction in the rent* of his farm; for although he saves the sum of 45*l.* a year on his rates, yet the landlord is benefited by about 140*l.* a year in the land in his own hands. As the tenant's interest is evanescent, and the landlord's permanent, surely it ought to be the interest of landlords to abate rents to those holding under them, when they assist in such reforms as these?

The church has been whitewashed, scoured, and

cleaned up by the paupers, when as frost was on the ground they could not dig; thus the church has been improved in appearance, and the church rates also reduced.

With John Hull, about the same time, I visited Great Missenden, in Buckinghamshire, (and also Choldsbury Farm,) and sent an account of the state of that parish which appeared in the Bucks Gazette. I am truly glad to find the Rev. D. Capper has taken up the subject, and has brought out two valuable pamphlets on the workhouse system, of which every parish should have one copy at least. By following a judicious course, the select vestry at Great Missenden have reduced the rates, which in 1832 were 1,907*l.*, to 1,156*l.* the amount under the improved system, which was only six months in operation at the time of Mr. Capper's first publication, and in his last he says all goes on well. But it is needless to say more on this head than to refer to the pamphlets, to be had at Hatchard's, Piccadilly. By adopting similar means, any parish can reduce its expenditure. The mode in which the select vestry there effected so great a reform was humane and highly praiseworthy, and affords another testimony favourable to the *loan fund system*. Also at *Tunbridge Wells* it has been tried and found successful, and its success there is mainly to be attributed to the spirited and indefatigable exertions of one very benevolent and efficient friend to the poor. I think the experiment there of so much

value, that I attach the last report from the committee with the rules. As an aid to the *loan fund*, a plan might be adopted, that of taking in sums on loan, at $4\frac{1}{2}$ per cent. interest (if left three months), to be lent out on the plan recommended in the works alluded to, at the rate of 5 per cent. It is thought that considerable sums would thus circulate, and that after confidence was established, the half per cent would pay all the expenses of management; to secure that credit it seems only necessary that a few benevolent individuals should agree to pass their security for certain amounts, to some persons in whom the district has most confidence, and to that amount alone should the borrowing be extended: thus the savings of one part of the community would be immediately applied in assisting others in less favoured circumstances; and as good security is sure to be required under the loan fund system, in lending it out, no risk would be run by depositors.

A loan fund society is about being established in London, Mr. Wm. Viall, Secretary, on application to him, 6, Grange Court, Lincoln's Inn, a prospectus can be had. Mr. Hawes, M. P. for Lambeth, advocates the measure, and means to present a bill in the forthcoming sessions on the subject.

It appears to me that a clause should be inserted in that bill, stating that in every town, village, or hamlet, where a certain number of benevolent individuals shall meet and agree to subscribe half the expense for a room, a clerk, books, and papers,—

the county or district should pay the other half, provided the entire amount for each society shall not exceed ten or twenty pounds annually, the object being to encourage the setting up of such admirable institutions in every locality. When the transactions became considerable, the half per cent will be amply sufficient to defray this expense, and of course when that is the case no further demand will be made on the public.

Note—Mr. Fountain says, they make the vestry room at Ruislip answer every purpose, and give the clerk 3*l.* a year for keeping the books.

As a measure highly beneficial to the poor, I mention *self-supporting dispensaries*, upon the plan recommended by Dr. Smith, of Southam, (an individual whose exertions for the good of the poor are beyond my praise); an establishment of the kind ought to be attached to each parish farm for the poor of it, and of the surrounding neighbourhood. Dr. Smith has also allotted land to boys in the village of Southam, which they cultivate, pay him the rent of, and make sale of the produce. I have visited his self-supporting dispensaries at Coventry, and can recommend them highly. I attach one of the rules of the dispensary; but any person wishing to establish a small allotment of land to a school or a self-supporting dispensary, will find Dr. Smith ready, and in the most obliging way, to give them every information on the subject.

John Hull, of Hillingdon, in a little work entitled “Philanthropic Repertory, or Plans for bettering the

condition of the Poor," to be had at Ridgway's, points out many ways in which he has himself assisted them, and urges others to do so also. To the exertions of this worthy and benevolent individual, many and many districts owe the only education now given, with the assistance afforded by the British and Foreign School Society.

These several plans may all be acted on in the different localities, as found most wanted, and all will I, trust, conspire to restore the working classes in both countries to an independent situation. Plans similar to, or such as I have endeavoured to describe, are more than ever required at this moment, as that great measure, the poor law amendment act, is coming into operation, and will require, particularly at the commencement, some assistance to bring its beneficial and necessary reform, quietly, and if possible silently, and without undue severity, into practical use.

If to prevent crime, to encourage honest industry, to induce the bulk of the population to look to their own exertions for a livelihood, whilst at the same time care is taken of the lame, the blind, the lunatic, the idiot, the poor groaning under sickness and disease ; if to assist objects such as these, to restore the sick man, or woman, the head of a large helpless family to health and strength, be the true design of the law of Elizabeth, sure I am, the framers of the new poor-law bill, the collectors of that mass of evidence, (the value of which, to the country, it is impossible to estimate,) the compilers of that report,

will be handed down to our latest posterity, as the great benefactors of the English nation.

Far be it from me to say that all their work is completed; on the contrary, I conceive this magnificent work but begun, and the way made simple and easy for others to follow with plans, which will daily and hourly appear from the labours of these commissioners, necessary to be adopted, for the relief of distress in whatever varied form it may be exhibited.

That the British empire is capable of supporting all her sons, if they be but industrious; no person having studied these reports, and the mass of evidence attached, can now be bold enough to deny.

Remarks on the Rivers Shannon and Suck.

The elaborate reports and surveys on the subject of the river Shannon, ordered by the House of Commons to be printed in 1833 and 1834, sufficiently prove the correctness of the views entertained by myself, and by the other parties who at my urgent entreaties met in July 1831, at the Thatched House.

I have thought it therefore useful to republish some of these reports, shewing the opinions entertained by persons competent to form a judgment on a subject of so much importance to Ireland. That of Mr. Rhodes, employed by government in consequence of our report speaks for itself—he estimates the expense for the improvements on the river Shannon, from Limerick to Lough Allan, at 153,163*l.*,

and to improve the drainage and navigation of the river Suck (one of the rivers tributary to the Shannon), as far as Ballyforan Bridge, a distance of 25 miles 35,485*l.*, making the total estimated expenses of both works 188,648*l.*; several bridges are included in the estimate, one across the river at Athlone, (the only pass for several miles, and the principal one on the great Western Road,) as the present bridge is scarcely wide enough to admit one carriage to pass, and on market days is so frightfully crowded as to endanger the lives of the inhabitants and strangers passing to and fro.* Shall it be said that to make *the noblest river in the British Empire*, a river which for 250 miles can be made navigable for a large class of steam-vessels, the British government hesitates to grant the paltry sum of 153,163*l.*? I will not suppose it possible, and feel certain that after this fact is brought fairly before the people of England, they will not permit such a work to be longer delayed.

River Suck.

The Honorable Gonville French has come forward with a distinct proposition to raise by subscription half the sum necessary for the improvements on this river, if government will advance the other. But

* Frequent promises have been made by different governments (as Counsellor Boswell, to whom Athlone is much indebted, has told me,) that this nuisance should be abated, and a new bridge erected, but still nothing is done.

the parliamentary reports on the river Shannon navigation (government ought to circulate them widely,) shew the actual state of that river, and propose works which should be executed at once. I trust that Mr. Rhodes' plan will be acted on to the full extent, and that half measures and paltry outlays will be given up, and that the comprehensive plan recommended by that able engineer will be speedily executed,—a work which shall entail permanent good on the country, and do honour to the government that has the spirit to undertake it.

I beg to return thanks to the *Labourers' Friend Society* (which has effected so much good for the English labourer,) for having allowed me to deposit my maps, plans, surveys, and reports on public works in Ireland, with their secretary, at Exeter Hall, as also for having permitted friends to Irish improvement to meet one day (Tuesday,) in each week at their rooms, where the same can be inspected, and for having devoted a few pages of their invaluable periodical to statements about Ireland; I admire the good sense, as well as liberality in thus acting: in order to benefit the English labourer, the Irish labourer must be found in employment at home; the importance of this suggestion will, I trust, become daily more and more apparent to the gentlemen at Exeter Hall.

I wish to mention *the great Leinster railroad*, a prospectus of which I attach hereunto. Messrs.

Vigors, Gale and Hart, whom the committee have selected to receive and forward communications on this important work, are gentlemen possessed of much practical knowledge and information. I am however most anxious that this rail road should, as far as is practicable, be made available to one drawn across Ireland on the annexed map; considering the wealth of the part of Ireland which this line proposes to pass through, the mines of coal and iron-stone, the slate and lime quarries, the tracts of mountain land, which it will open out to cultivation, and approaching as it does the commercial cities of the south and west; all these, combined to the great advantage of communicating with the western harbours, and so making the passage to the New World *at once safer and more certain*, I may fearlessly state that there is no work more important, nor that ought to have more entirely the support of government and the country at large.*

I have extracted largely from the Western Harbour papers, in order that some idea may be formed of their importance, and of a direct communication with them by a rail road across the island.

* A survey of the line to Kilkenny is now being made by Mr. Ahar, of Castlecomer, who has heretofore been employed by government in various public works, and on the survey of the bogs of Ireland, and was examined on the same by a committee of the House of Commons: should his report be made in time for this publication, I shall have great pleasure in giving it.

I shall now conclude these remarks, hoping that government and the landed and commercial interests will aid me in the furtherance of these plans of improvement ; and above all, I appeal to the landlords of both countries to look in time to the depressed state of their tenants ; that by coming forward and making proper and judicious abatements in their rents, they may encourage tenants to assist in lessening the charges for the poor on their estates, which, if not checked by finding useful employment for them on the land, threatens to involve all classes in one common ruin.

REPORT
ON THE
STATE OF IRELAND.

*Appendix (XI.) to the Report on the State of Ireland,
ordered by the House of Commons, August 1832.*

PAPER AND MAP,

Delivered in by T. BERMINGHAM, Esq., on the Resources
and Capabilities of Improvement of Ireland.

THE present moment seems to call upon every person who has any knowledge of Ireland to give the public information as to the resources of that hitherto much neglected country.

The Map given in is one of the three Kingdoms, with a view of showing the advantage of more closely connecting certain portions of each for the advantage of the whole.

On the River Shannon.

1. The dark green lines and spots on the Map of Ireland show the course of the noble River Shannon, from its source at Lough Allen, to the north-west,

until it empties its waters into the Atlantic to the south-west. With regard to this river and its capabilities, a full report has, in the course of last year, been submitted to the public. I was the person who got up the meeting at the Thatched House, from whence that Report emanated.

The Government, in pursuance of that recommendation, have sent experienced engineers to report thereon. Colonel Burgoyne, Chairman of the Board of Works, and I, have since traversed the line, and I do hope some steps will forthwith be taken to improve the navigation of that river, and, as far as is practicable, drain the lands in the vicinity. I refer to that pamphlet, also to a map of the River Shannon made in 1796, and to Mr. Williams' pamphlet on Ireland.

On the River Bresna.

2. The River Bresna can easily be opened up to the thriving and populous town of Birr, in the King's County, thus giving that town the advantage of the Shannon communication, upon which are steam-boats. The Board of Works have got a survey and estimate made of the proposed improvement.

The dark green line shows pretty nearly the course of that river, about 10 English miles in length.

With great ease also could a cut be made opposite that river, through the low country, draining a great extent of country, and opening with the town of

Loughrea, in the county of Galway; this proposed cut to communicate with the River Shannon is marked with a black line, about 18 English miles in length. I also refer to the large Map, showing the country through which this passes.

On the Railroad in connexion with the Town of Galway and Loughrea, and the River Shannon.

A proposed line for a railway communication across the rocky country is marked in pink colour from Loughrea to Galway Port, a distance of about 20 English miles, thus connecting the Port of Galway with the River Shannon, by means of a railroad and canal.

A prospectus of this work has also been submitted to the public, by Mr. Dunne (of Newcastle-on-Tyne) and myself, which sets forth fully the expense of executing this, with the proposed advantages to be derived from the undertaking. That prospectus I refer to, as also a map on a large scale, which I had copied from the county maps and bog reports, showing the country through which this communication is intended to pass.

Railway from Lough Derg, on the River Shannon, to Carrick-on-Suir.

5. The proposed line of railway from Lough Derg, on the Shannon, to Carrick, to meet the river Suir, is marked in pink.

A prospectus of this line, with the communications respecting this work, can be had of Mr. Dixon Holmes (the Secretary to the Railway Company), who has evinced much anxiety on this subject, and to whose exertions mainly may be attributed the present forward state in which that Railway Company now appears to be.

Proposed Junction of the Western Lakes.

6. The proposed junction of the Western Lakes and the River Moy, with the sea at Killalla and at Galway, thus giving a complete water communication for steam-vessels through nearly the centre of the province of Connaught, nearing almost all the Western harbours.

The existing lakes and harbours are marked in deep green.

The proposed canal-cuts in black line.

I also refer to a report from a Committee on this project, as also to a map taken of the country through which this would pass.

A map of the intended canal-cuts, showing the lakes and rivers, as taken from the maps of Mayo and Galway, and the bog reports, together with the resolutions of the grand juries of Galway and Mayo in favour of the work.

Upon examining the large map to which I refer, the eye will at once see what tracts of land will be gained by the work.

On the River Suck.

The River Suck is a splendid river, joining the Shannon near Shannon Bridge ; this might be easily made navigable, and a vast improvement in the lands on its borders, by taking away some sharps and weirs, as far as Baliforan Bridge, till it meets the Shriven, which could easily be made navigable to Mount Bellew, in the county of Galway, a very important town carrying on a great trade in corn.

The river Suck continues very capable of improvement to near Castle Reagh, in the county of Roscommon. The course of the Suck is marked in deep green.

The Shriven being a small river requiring widening, is marked in black : as to its capabilities, I refer to Mr. Grantham's Survey and Report, made under the orders of Government, and likewise a Memorial to the Lords of the Treasury, from Lords Clanricarde and Clancarty, on the subject of Improvements on the Rivers Shannon and Suck, with the Reports of Mr. Grantham on the subject ; also to the resolutions of the grand juries of Galway in favour thereof.

On the connexion of the Shannon with the Northern Lakes.

Near the town of Leitrim a small stream is said to communicate with Lough Erne, in the county of Fermanagh : it would then appear to be not very difficult to communicate, by a canal-cut, the upper

Shannon with the great Northern Lakes and Canals. That small river appears on the map.

On the Grand Canal.

The Grand Canal from Dublin to Ballinasloe, in the county of Galway, crossing the River Shannon near Bannager, in the King's County, is marked in yellow colour; it traverses about 100 English miles, through the great Bog of Allen. The branch of it to Athy, in the county of Kildare, communicating with the Barrow navigation, is marked to Athy in yellow ink. The Barrow navigation is marked in deep green.

The charges of the Grand Canal Company are supposed to be excessive. The Barrow navigation requires much improvement.

On the River Barrow.

The River Barrow could also be improved from Athy to Monastereven, towards the source, by taking away many obstructions in its course, which would be the means of reclaiming much land now injured by too much flooding.

On the Royal Canal.

The Royal Canal stretches from Dublin (by Mullingar) to Longford and Tarmonbarry, where it meets the Shannon.

This line is also marked in yellow.

On a Cut to the Town of Roscommon.

From Lanesboro' (on the River Shannon) a cut could easily be made to the town of Roscommon, into a very considerable commercial country.

This proposed line is marked in black.

On a Railway from the Port of Galway to Dublin.

From the port of Galway across the river Shannon, at or near the town of Bannager, a line is marked in red, showing a most eligible line for a complete railway communication across the island, a distance of about 150 English miles. I refer to a prospectus of the railway and a map of the country which it is proposed to traverse. The map shows the quantity of waste lands in its course, and other information respecting it.

Supposing such a communication made to meet the Liverpool and Manchester railway when the Channel is crossed; and it is obvious that a bond of union will then be formed between the two countries, and it will facilitate the communication between the old and new world in an extraordinary degree.

On the Southern Railway to Carrick-on-Suir.

In like manner consider how much the west and south of Ireland must be benefited by the proposed railways to Waterford with the steam-boats to Bristol, to communicate with the proposed Bristol and South-

ampton railway to London, which is traced on the map, and a sketch of the proposed railway from Bristol and Southampton to London, I refer to.

On the Northern Lakes and proposed and existing Canals.

A yellow line shows a canal from Newry to Lough Neagh (in existence).

A black line shows the proposed canal from Lough Neagh to Lough Erne. An Act of Parliament has passed for making this cut.

A red line shows a proposed railway from Lough Erne to Ballyshannon.

The Foyle and Mourne are marked in green, being navigable from Londonderry to Strabane.

From Strabane (by Armagh) to Lough Erne is marked in black lines, where a canal cut should be made.

A yellow line shows the existing communication from Drogheda to Navan, the river Boyne being navigable in that part.

The proposed Works in the North.

The black is a proposed line of canal (by way of Kells and Belturbet) to Lough Erne.

Another black line shows the proposed canal from the Royal Canal at Clonard Bridge (by Athboy) to Kells.

The proposed communication from Colrairie to the sea is marked with a black line.

Suppose these works, or even a part of them, to be taken up by Government; the Board of Works to execute them, trusting for repayment of any money advanced, to moderate tolls, and the general improvement of the country.

Suppose an outlay of 1,000,000*l.* per annum so spent, and in the course of 10 years all such works might be completed.

These public communications would tend manifestly to induce individuals to undertake further improvements.

Suppose then, facilities be given to proprietors to make lengthened leases of waste or comparatively waste lands; this very expenditure of 1,000,000*l.* per annum would enable the poor to take spots and become useful occupiers of such lands, as is given in evidence by all public engineers who have had to lay out money on the waste lands.

Home Colonies after Lord Clonbrock's Plan, executed by Mr. Bermingham.

As to home colonies for cultivating the waste or inferior lands of Ireland, I beg to refer to a statement printed by me a year ago, called "Sketch of a plan for colonizing the Poor," as practised by me for Lord Clonbrock (in the county of Roscommon): I hand in now, beside that printed sketch, a plan of the estates, showing where these people came from, and how they now are.

The buildings and improvements went on, on this estate, whilst the county was disturbed ; and now the people are thriving and the estate improving. The small occupiers hold now directly under his Lordship, formerly they did not. The middle-man, though receiving 200*l.* a year abatement out of 700*l.*, did not allow 1*s.* abatement in his charge to those under him. This occasioned much of the disturbances that disgraced that county last year. But by taking up the middle-man's lease, and re-leasing to him only such part as was actually in his possession ; letting the rest of the land to his cottier tenants at the same rent the middle-man paid ; giving the small occupiers encouragement, by showing that as they improve the land more land will be gained, and consequently their holdings enlarged ; these measures, with the aid of the special commission, have completely restored peace to a most dreadfully disturbed district.

The sum spent on these improvements is repaying an interest at present in the more punctual payment of the other rents, and will ultimately repay much more than the cost to the proprietor.

The map referred to will show what great exertions the tenants are making to improve the most unproductive part of the property, the bog in its present state.

To sum up, let this plan be acted on : Let the outlay on roads and public works be done by officers under the control of Government, who should peri-

odically account to Parliament; let 1,000,000*l.* per annum be so expended. This will be cheaper to the nation than keeping up an immense force to keep Ireland! starving Ireland! quiet!

The mere saving in tolls on turnpike-roads and county charges would be great; and I contend for it, that a moderate toll on such lines of communication would repay every shilling of the outlay, with a moderate rate of interest, if spread over a period of 40 years.

The outlay of 1,000,000*l.* annually would employ 50,000 heads of families (allowing each head of a family 20*l.* a year). Thus 50,000 families of the poorest would be kept in employment and watched, as they, being the poorest, are no doubt the worst characters. It may fairly be concluded, that after the first and second year, each of these families would have saved enough to enable them to take a portion of land and stock it, which had been comparatively waste until these improvements. Thus, in fact, 50,000 families will become located annually. Individuals or companies might do this, or a Home Colony Board, to be formed under the direction of Government.

On the Castle Comer Colliery Coal District.

From the colliery district of Kilkenny and Queen's County, were a short railroad constructed, as is laid down in the map in red, from Castle Comer to Carlow,

a distance of about 15 statute miles. The employment that would flow by the working of the vast field of coal now imperfectly worked, communicating in a cheap way with the navigation of the Barrow and the Grand Canal, would be great indeed. It is generally considered that 100,000 ton of coal and culm is now raised in that coal district, were facilities afforded, the quantity might be doubled.

The lime-stone district is within five or six miles of the colliery, and thus culm and coal would go down and lime come back in great quantities. The fire-brick trade would also be very considerable.

The colliery district is also marked in black colour.

I think I may say that one-half of Cork and Kerry, one-third of Clare and Limerick, half of Galway, Mayo and Sligo, and one-third of Roscommon, consists of mountain reclaimable with profit, and some tracts of bog that may be also reclaimed with profit. This, as will be perceived, only takes notice of the countries to the south and west of the river Shannon. There exists much reclaimable land in the other counties.

On the Roscommon and Leitrim Coal District.

In the district of Roscommon and Leitrim there is a considerable coal district, about Lough Arrow and Arrigna, near Boyle, with excellent iron-stone. When the navigation of the Shannon is improved,

and a short railway from or near Lough Arrow by Arrigna to Lough Allen, an immense source of employment in raising coal and culm would accrue, and this in a very wild, uncultivated country. The line of railway as proposed is marked in red.

The employment of 50,000 families (as proposed) on these works would provide for 300,000 souls annually ; and if, as I before supposed, after the first year, these numbers became located on the lands improved by these works, in ten years three millions of souls would be provided for, which is more than the present surplus (as it is fashionably called) or any ordinary increase of population can be expected to amount to.

To repay the Government advance of ten millions, which in ten years this outlay may come to at four per cent., would be 400,000*l.* a year. It appears in all the Reports on Public Works in the west of Ireland, that the indirect return of increase in revenue was more than sufficient to reimburse the Government. But I contend that a low toll on the navigation and railways of above 1,200 statute miles (which it is contemplated will be made) would repay in that way.

The tolls on the Grand Canal alone are above 40,000*l.* a year, (say about 150 statute miles in length) charging a high rate and with a slow motion ; may we not calculate that on 1,200 statute miles of steam conveyance the toll itself will amply repay the advance ?

I shall briefly recapitulate the documents I have referred to in illustration of these statements.

The map of the United Kingdom, and maps of Ireland and England, separately marked with the different coloured lines, sold by James Wyld, 5, Charing Cross.

A map of the counties of Galway and Mayo, showing the line of lakes and the tracts of waste land, done under my direction from the county map and bog surveys.

A map of the county of Galway, showing the railway and canal communication.

A map showing the line of country from the river Shannon to Dublin (through which is to be constructed a railway with the waste land through which much of it would pass).

The canal communication laid down through the Western lakes.

The map of Lord Clonbrock's Home Colony in the county of Roscommon.

The map of the river Shannon, made in 1796.

Bryam's Practical View of Ireland.

Pamphlets, as follows :

Mr. Williams, on the State of Ireland.

Report from myself and others on the river Shannon and the Western lakes, and railroad.

Plan to colonize Cunnemara, as proposed by Mr. Bellew, of Mount Bellew, and myself.

Lord Clonbrock's Colony in Roscommon. By me.
Plan for Joint Stock Companies to cultivate waste lands.

Report on the State of the Poor in the Borough.
By Mr. Francis Trench.

Agricultural Employment Association.

The Dutch Colonies.

The Irish Protestant Colonies.

Mr. Vandeleur's Plan in the county of Kerry.

Mr. Sadler's Work on Ireland.

The Stradbally and other Loan Funds.

The various Bog Reports.

The Outlay of Public Money on Roads.

The Memorial of Lords Clanricarde and Clancarty
on the Shannon.

The Maryborough Plan for Agricultural Employment.

From all of these it will appear that there is plenty of work for our people, if the means of setting them at work is advanced by Government. That a fair return of interest of money may be calculated on, and thus will the people be employed at home, and not press on the market for labour in England. And thus may the Union be preserved and consolidated, agitation checked by full employment, and Ireland become one garden.

I do hope some such plan may be speedily acted on. Landlords in Ireland must look to making the present occupiers on the land men of capital, by

leaving more of the produce of the land with them until they can create some ; the Government, on the other hand, must help the landlords by making these public improvements.

Mr. Stephenson, of the Liverpool and Manchester railway, should be consulted on the capabilities of Ireland, which he has visited, as also Mr. Dixon Holmes. Both these gentlemen can give important information on that subject.

The documents here referred to will be shown to any person anxious for further information, by applying to Mr. Wood, the Secretary to the "Labourer's Friend Society," Exeter Hall, who has kindly undertaken to take charge of them.

22 June, 1832.

REPORT
ON THE
STATE OF THE RIVER SHANNON,
BOTH AS TO THE
NAVIGATION AND THE DRAINAGE
OF THE
ADJOINING LANDS.

REPORT, No. 1.

To the Most Noble the

Marquis of DOWNSHIRE, &c. &c. &c.

*1, Sackville Street, Piccadilly,
29th July, 1831.*

MY LORD,

At the request of the Committee, who have for some time past been sitting at the Thatched House, on the subject of the River Shannon, and of which your Lordship has been chairman, I publish the various reports and documents submitted to them. It may be interesting to give some account of these meetings and their origin. I think this the more important as various statements have been sent forth, some quite at variance with the object of those who took a part in these meetings.

Since the month of February last, my avocation, as agent to properties in the counties of Galway and Roscommon, and as Magistrate during a period of great excitement, made me feel the necessity of recommending extensive works, by which employment might be found for the idle portion of the community of the west. I advocated and assisted in measures that were strong and effectual to restore tranquillity to portions of those counties; but I always looked to employment for the people as a more certain means of restoring peace.

I did think that some measure should be tried to increase, by fair means, the price of labour; and finding new sources of employment for the idle appeared to me to be the most effectual means of raising that price.

I did think that *5d.* a day was too low wages for an able-bodied labourer—the price of labour generally in the west of Ireland.

I turned my mind to various ways of finding employment.

First, by locating the poor; that is, by taking from the populous districts, and placing what are called “the surplus” upon other and wilder districts. Vide Statement as to the Home Colonies of Castle Sampson and Isherbane.

I tried this with effect, and can pronounce it to be a wholesome process, capable of considerable and almost unlimited extension.

No man can be called a pauper who holds five acres of land, and digging any land will improve it.

Wherever the small occupier has been, the land, when laid down to pasture, is sure for many a long day to mark, by its fertility, the former residence of the cabin holder.

As to drainage, I have laid out, at various times, and on various properties in various counties, large sums on such improvement, and I can fearlessly assert I never laid out one shilling on any drain that has not been amply repaid ; therefore I advocate drainage.

Again, as to roads, if it be found useful to make a good turnpike road, on which a Scotch cart and a tight Irish horse can draw about three times as much as was formerly done on the old-fashioned roads, and with the little "low-backed car," I consider a railroad, whereon one horse can draw about five times what the improved Scotch cart will allow of, or a steam carriage two hundred fold, is a still greater improvement, and should be encouraged.

Again, as to canals, if it be found important to make these, considering their slow motion, how much more important must it be to make our great rivers and lakes navigable for steam-boats, where so much is made to the hand.

Again, if it has been considered important to spend such vast sums as have been spent in making surveys of bogs, with a view to their reclamation, and if these surveys show how drainage can be effected at large expense, how very important it must be to ascertain whether the obstructions, natural and artificial, in the

great rivers, do not keep up the water in these bogs ; and that if such were effectually removed, whether these bogs would not, as a matter of course, in due time consolidate and settle down, and become capable of vegetation ; thus giving a fund of useful employment for our poor for the present and future ages. Vide Statement as to recent Bog Improvements both in England and Ireland, by Mr. Reid.

The foregoing considerations induced me to call some meetings in Dublin, and also to have similar meetings in London. The result of which is annexed hereto ; and though remotely interested, your Lordship did not shrink, on that account, but attended eight different meetings, which we have had in the last three weeks, lasting several hours each time.

I am happy to say many of our nobility and gentry also attended, more than I ever remember to have seen on any similar occasion. The interest that these discussions have excited—the fact that men of all parties may meet and discuss measures calculated to serve the interest of their common country (Ireland), without politics being introduced, and be unanimous ; these are facts which I trust must make these meetings important in the public eye. That good results may flow from these meetings—that measures may be quickly adopted by the nobility and gentry of the west of Ireland, where so much want and destitution prevail—and in some parts so much of turbulence and disorder—that all ranks may unite with the

Government in an endeavour to restore peace and comfort to those distant parts, and that your Lordship's example, and other distinguished individuals, may be closely followed ; that we may live to see Ireland rival England and Scotland in the management and cultivation of her soil, and its peasantry, *by being usefully employed*, may become also tranquil and orderly, is my earnest desire. The soil of Ireland is good, her resources great, she only wants the close attention, the exertion, and the means possessed by the wealthier classes, to call into action those resources for the benefit of themselves and the empire at large. Whenever the spirit of improvement shall take hold of the minds of our gentry, then, and not till then, will the energies of Ireland be put forth ; and the result must be what your Lordship has so much at heart—the improvement of your native land.

I think it right to state that we owe much to the kindness of Mr. Wyse and Counsellor Lynch, who devoted so much of their valuable time to the business of the Committee ; and also the county of Galway Members, who were as attentive as possible ; as also to Mr. Holmes, for the active part he took as honorary Secretary. I hope Mr. Stephenson's Report will be read with attention. I think his suggestions are very valuable ; and, given as they were when his time was so much occupied, the compliment was the greater.

I have the honour to be, your Lordship's
faithful and obliged servant,

THOMAS BERMINGHAM.

REPORT, No. 2.

YOUR Committee, in compliance with the instructions they have received, have examined the documents laid before them, and submit to your consideration the following Report :—

These documents, acts of parliament so far back as the reigns of George I. and George II., during the existence of the Irish parliament, and a variety of communications from experienced engineers and other gentlemen, place beyond doubt, in the apprehension of your Committee, the great importance of improving the navigation of the Shannon, and of draining, if practicable, the lands upon its shores.

This great river, rising as it does from Lough Allen, in the county of Leitrim, continues its course through nine counties to the Atlantic—a distance of nearly 230 miles. In its course two millions of acres are more or less benefited or improved by its stream—benefited by the fertile alluvial deposit of its winter floods, and the facility afforded to the inland trade by its waters, for the export of minerals and of agricultural produce ; injured by the periodical overflowings of its banks, affecting a great extent of land, which, under circumstances of better regulation, might be brought into cultivation with great advantage to the proprietors, and to the country at large, on either side.

Your Committee feel deeply impressed with the manifold advantages which would arise from its im-

provement; among which the increased commerce on the river itself, the drainage and consequent cultivation of the adjacent bog lands, the employment of the peasantry inhabiting the district, and the consequent melioration of their condition, obviously present themselves as the most important.

In proof of the capability of this great river for commerce to an almost unlimited extent, it need only be stated, that, since the introduction of steam on the Shannon, the tonnage employed in the navigation has augmented from 500 tons to between 16 and 20,000, notwithstanding the various existing obstructions and disadvantages. A great and admirably situated water communication, so highly susceptible of improvement—a mild climate, excellent land, and a peasantry remarkable for their anxiety for employment, are the best guarantees that government or individuals can desire for a large return to every outlay of capital made with a view of furthering this improvement.

It appears to your Committee, that the navigation of the river is impeded both by *artificial* and *natural* obstacles.

The *artificial* obstacles they trace chiefly to—*First*, the apathy of *Government*, or the neglect of its servants in suffering works necessary for the navigation, and for the execution and maintenance of which large sums of public money have, from time to time, been granted, to fall into decay.—*Second*, the omis-

sion of the *Grand Canal Company* to fulfil their special agreement entered into with the *Directors* of *Inland Navigation*, for the completion and support of works on that portion of the river (40 miles between Lough Rea and Lough Derg), conveyed to them in 1806.—*Third*, the numerous stone weirs and other obstructions, erected in various parts of the river by individuals.—*Fourth*, to the want of good and convenient roads and canals to the river from the towns near.

Your Committee forbear to enter here into the details and facts on which their conclusions are founded, but refer to the various documents annexed. Your Committee, however, cannot but request your particular attention to the Statute of 40 Geo. III. chap. 51, whereby a sum of 500,000*l.* was granted by Government towards improving the inland navigation of Ireland, and “more especially the Shannon.” Such, however, has been the remissness and neglect of those to whom the appropriation of this sum was entrusted, that your Committee have not been able to discover that any portion of it was ever applied to the objects for which it was intended, at least so far as the improvement of the Shannon was concerned.

These artificial obstacles, however, it appears to your Committee, might, with very little exertion and expense, be removed. Your Committee recommend for that purpose an immediate application to Government, in the first place, respectfully soliciting them to

institute inquiries into, and to apply remedies for, the various dilapidations; and next, to see that the Grand Canal Company, in accordance with their contract with government, do, without delay, perform such contract—The removal of the weirs and other obstructions.—Government should be solicited forthwith to undertake, with a view of doing away with such abuses, and to cause the present laws to be enforced. *New roads, canals, rail roads, and landing places, they are of opinion, might be undertaken with great advantage by government, the outlay for which would be repaid, in the same manner as for works on the river, by moderate but adequate tolls.* The connexion which would instantly be established between parts of the country now “altogether separated,” though not remote, and the consequent impulse which would thus be given to commerce, would ensure, there is little doubt, not only the repayment of the original advance, but create a fund, if properly husbanded, for the maintenance of such works, and their extension, if requisite, to other portions of the country in future.

With regard to the *natural* obstacles which still obstruct the navigation of the river, your Committee beg to state that they met with considerable diversity of opinion, both on their *producing* causes, nature, and means of removal, in the several Reports submitted to their examination. The time allowed for obtaining adequate information on so extensive a

subject has been too short to enable your Committee to deduce from it any other result than a deep conviction of the necessity and importance, and, at the same time, of the practicability of immediate improvement.—They recommend, therefore, that before any decisive steps be taken, as to the nature and extent of improvement, such information should be sought for, and, if possible, obtained ; and, for that purpose, would suggest that Government should be requested to direct a further Survey to be made, in continuation and conclusion, of Mr. Grantham's able Survey in 1822.

With regard to the advantages and practicability of *draining* the adjacent lands—the second object of their inquiry—your Committee have had to notice the same variance of opinion as that which exists on the preceding question. Your Committee, therefore, forbear going further into its several bearings at present, but beg leave to observe, that there is now in progress through the House of Commons a bill for the promotion of such objects, which, if passed into a law, may be applied, they conceive, with ease and advantage, to this precise purpose. In the interval, they would recommend, that should the above suggestion of an additional Survey be adopted, such Survey should not be confined to the improvement of the navigation of the Shannon alone, but should be extended to the question of draining the lands, at present subject to inundation on either shore.

Your Committee beg leave to annex, for the more ample illustration of these suggestions, the following documents to their *Report*.

(Signed) DOWNSHIRE,
 Chairman.

REPORT, No. 3.

Mr. T. Bermingham, on the Survey of the Shannon.

1, Sackville Street, London.

MY LORD MARQUIS,

Having been called on by your Committee for my opinion in the shape of a Report, I will endeavour to explain, as far as I can, from the only information within my reach (namely, Mr. Grantham's Survey of the Shannon, and the Report of the Commissioners of Bogs), why I contend for regulating the Falls of the Shannon.

The main object appears to me to be, the power of getting under the bottom-water of the bogs and low grounds; and, at the same time, preserving, and as much as possible improving, the navigation of that great river.

With reference to the deep drainage of the bogs, with a view to their reclamation, it is only necessary for me to refer to the Reports of the Commissioners of Bogs on that head.

The first page of that Report speaks highly in praise of Mr. Rennie, and shows that the Commissioners consulted him on all their movements, from which they seemed to have derived the greatest advantage; in fact, they seemed to have acted under his guidance and direction. The references which I attach to this Report from the bog surveys, and the Report of Mr. Grantham, I trust your Committee will find useful.

It appears that Government, in the year 1820, thought it advisable to have a survey of the river Shannon, with a view to reclaiming the waste lands, and directed Mr. Rennie to cause that survey to be made; in consequence, Mr. Rennie directed Mr. Grantham to take the levels, but unfortunately for Ireland, the death of that distinguished engineer prevented that Report being concluded.

I feel satisfied that that Report shows that the objects of maintaining and improving the navigation, can be coupled with an extensive drainage, so very necessary in the west of Ireland.

The course, therefore, which I take the liberty to recommend to your Committee, as the most natural and the most obvious to pursue (seeing that former Governments have thought the subject to be of deep importance—that *vast sums* have been spent in several years, since 1809, in Reports and Surveys—that the death of Mr. Rennie left the point unsettled)—will be to recommend to the present Government to take

up the matter—to employ Mr. Telford, the highest authority now in England, and a perfectly impartial and disinterested individual, to collect all information on the subject now available, and to make further inquiries, if necessary, and to draw up a Report, and give his opinion on a subject so deeply interesting to Ireland.

No time should be lost in getting such Report; and, in the mean time, permit me to recommend to your Committee, as only fair by the country, and those persons engaged in the navigation of the river, to recommend, as shortly and speedily as possible, to the Government the allocating a specific sum of money out of the proposed grant for public works in Ireland, to be laid out on the river Shannon, and its tributary streams and rivers, in such manner as Mr. Telford may hereafter recommend.

I beg to take this opportunity to call on your Committee to express your decided opinion, that, in all expenditure in Ireland, the leading principle to be kept in view by Government shall be taxation according to benefit; that is to say, that where public money is employed in any works by which land may be reclaimed, canals, common roads, or railroads made, a tax shall be laid on the lands and projected works, in proportion to the advantage to be derived, (but to be spread over a long period, suppose forty years,) so as to repay the Government advance; and above all, to recommend that, as far as

possible, all advance of public money shall be made under the control of Government for great public works.

I have the honour to be,
Your Lordship's obedient servant,
THOMAS BERMINGHAM.

To the Marquis of Downshire,
Chairman of the Committee
for the improvement of the
Shannon.

*References to Public Documents alluded to in the
foregoing Report.*

From Grantham's Survey of the Shannon.

	PAGE
Mr. Grantham on the river Suck	8
Ditto	9
Expense	10
On Lough Derg	13
Lower Brusna .....	..
The Upper ditto	14
Sharp at Athlone .....	..
Lough Rea	15
River Inny .....	..
Two small rivers .....	..
Bogs on Lough Rea .....	..
Tarmonbarry Falls .....	..
Shannon, 200 miles navigable	17
The Winter Rise .....	..

	PAGE
No plan but deepening the bed of the River	18
Mr. Head's Domain	22
Mr. Holmes' ditto.....	23
Fourteen feet at Killaloe off	18
Mode of doing it	19
As to Land and Bogs to be reclaimed, see Memorial of Lords Clanricarde and Clancarty attached to Grantham's Sur- vey and Report	6
Expense.....	5
Proposed security for outlay	6
Extract from Killaly's Report contained in same Survey	7
Bogs on the Shannon	14
Near Athlone .....	..
Banagher	27
Callow Land by Brusna	26
Bog and Callow Land, Lanesboro'	35
Camlin River	36
Lough Forbes, and Clonart River	37
Bogs and low lands on Lough Forbes ....	..
Advantage generally to Lands and Bogs under influence of the River	39
<i>To Bog Reports.</i>	
Level of Lakes, 1st Report	11
Advantages of irrigation from above, 2d Report	101
Scouring main Rivers	Longfield
Bogs from Athlone to Shannon Harbour, 2d plate, 21—7	148 Townsend

	PAGE	
Level of Shannon	149	
On its occasioning Lakes		
Bogs along the Shannon	173	Edgeworth
Ditto Lough Rea .....		..
Sir H. Davy's Letter, Appendix No. 9, 1st Feb. 1811		
On draining Roscommon District, 3d Re- port	16 and 17	Longfield
Bogs of Lough Gara, 3d Report, plate 2, No. 2		Longfield
Roscommon District, 3d Report		
Bogs, plate 11, 12, 13, 14		
Ditto in Shannon, 9, 10		Edgeworth

First Report.

Valency's Map referred to, and Report as to the quantity of Land depending on the River Shannon for drainage		
Opinion on the effect from drainage, 1st Report	7	Griffiths
On Low Lands	45	..
Opinion on the effect of draining, and the process afterwards .....		.. ..
Experiment, 1st Report	8	Edgeworth
Effects on River Rine, remarkable.....		.. ..
On Quagmires	51	Griffiths
On the Bogs of the Queen's County		

Parliamentary Documents.

23rd July, 1822—2,023l, grant for Survey of Shannon ;
1813—ch. 143, 53 Geo. III. 150,000l. granted to liquidate
the debts of the Grand Canal ; ch. 144, refers to purchase

of Limerick Navigation out of a grant of 500,000*l.*; 1816—ch. 55, Inland Navigation Company; 1800—4 Geo. III. ch. 41, 500,000*l.* to render the Shannon navigable from Lough Allen to the sea; 2 Geo. I. ch. 12, River Shannon and its importance.

REPORT, No. 4.

The Report of Mr. George Stephenson, Civil Engineer.

London, 9th July, 1831.

To the Committee appointed to inquire into the practicability of improving the navigation of the Shannon, and for draining the lands in the vicinage.

GENTLEMEN,

The resolution passed at your meeting, held on the 6th July, having been communicated to me, requesting the opinion of certain parties, myself included, as to the practicability of improving the navigation of the Shannon, I beg leave, briefly, to submit such observations as have suggested themselves on a perusal of the documents which have been put into my hands. I must observe, that the whole of my information, as to the state and character of the river Shannon, has been obtained from the Report of Mr. Grantham upon that river. I should have been enabled to furnish a much more detailed and satisfactory Report had I been in possession

of the papers, plans, and sections relating to the Survey.

In the absence of these sources of information, it will not be expected that I should speak otherwise than very generally upon the subject of them.

In considering the question of the practicability of improving the navigation of the Shannon, it should be considered most important, if not an absolute condition of any measure that may be proposed, that it does not involve any injury to the land adjoining to its course; and the converse, that in endeavouring to render the drainage more perfect, no injury shall be inflicted upon the navigation.

It would clearly be a violation of these conditions, both to attempt to deepen the water where shallow, by raising dams for the purpose of keeping the water up to a higher level, and likewise to endeavour to lower the level of the water upon the shallows, so as not to leave the minimum depth sufficient for the purposes of navigation.

I trust I shall be able to show to your Committee, that not only may the one object be attained without any sacrifice of the other, but, moreover, that whilst benefiting the navigation, I am also improving the drainage.

The navigation of the Shannon, it appears, is at present liable to be obstructed by drought in summer, and by land-floods in winter. In certain places, it is true, side canals have been made, which tend to

diminish the evil ; but this they do only partially, and great inconvenience is occasioned in intermediate parts of the river. The land-floods, likewise, from the difficulty of getting the water to run off as rapidly as it comes down, constitute the obstacle to the better drainage of the low lands and bogs.

Our object, then, should be, to adopt such a plan as that, in removing the one difficulty—that of the land-floods—we do not increase the other,—that of drought.

It being, then, agreed, that the breaking up of the winter-floods is the main obstacle to the more effectual drainage of the bogs, and that our aim should be, not to reduce the summer level of the river, but to enable the winter-floods to escape rapidly, let us consider how this is to be effected.

It is well known that the Shannon abounds in shoals, the obvious effect of which is to block up the water; their removal is, of course, to a certain extent, expedient.

The expense of reducing the whole of the shoals would be very great; it will, therefore, perhaps, be advisable, in the first instance, to undertake such operations as shall effect most at the least cost.

It appears that at Killaloe there is a shoal of considerable extent, and that the outlet there is extremely narrow. The effect of this contraction in the channel, which has to vent the whole of the accumulated waters of the Shannon, is to back them up, as it does

to a considerable distance. The escape of the water at this point should, there is no question, be facilitated, and this I think may be effected without reducing the summer level of the river and Lough Derg.

The mode of doing this, which I would recommend, does not consist in cutting down the shoal to a depth of seven or eight feet below its present surface,—the effect of which would be to lower the summer level of the river to that amount,—a change which is not only uncalled for, but which would be positively injurious.

In place of this I would recommend that a large circular dam be erected at the mouth of the present channel, presenting a much greater extent of width over which the water may flow, than is afforded by the present channel.

Immediately beyond the dam, it is of course necessary that the channel should be enlarged, in order to enable it to vent the additional quantity of water tumbling over the weir. This may be effected in two ways. 1st. By taking advantage of a dry summer, and allowing the waters of the Shannon to flow through the existing canal, and then cut down the shoal to such a depth, or with such an inclination, as shall appear from calculation to be sufficient to give the necessary velocity. 2dly. In case the canal should be incapable of passing the waters, and that the removal of rock and gravel, composing the shoal,

should be found to be difficult, I would propose that a tunnel be made, commencing at the weir and terminating at the falls about half a mile below Killaloe.

The weir itself should be made of such an extent as to carry off the flood-waters as fast as they come down, so that instead of having the floods rise to the height of eight or nine feet, they would not rise more than two or three.

The effect of this reduction would not merely extend to the next fall and to the low lands immediately adjoining to the river, but its influence would likewise be felt in reducing the height of flood-water even to the very source; and, coupled with other works of a similar description, judiciously made in other parts of its course, would be found of marked advantage in permanently reducing the level of the flood-waters throughout the whole course of the river, and, consequently, in allowing of the more complete drainage of the adjoining callows and bog lands, and in protecting the low lands from periodical inundation.

In looking at the map of Ireland, it has appeared to me that it may be found of advantage to prevent the waters of Lough Allen from flowing into the Shannon, and to cut a channel in a north-westerly direction, along which they may run into Sligo Bay.

By this disposition of the waters of Lough Allen, not only will the channel of the Shannon be relieved from

the superabundant water which now flows along during the rainy season, but they will act very beneficially in scouring out the harbour of Sligo. The Shannon might likewise be made available to the supply of power to several valuable mills to be erected on its course.

I regret that the very limited period which I have had for the consideration of this matter prevents my enlarging upon the heads of the foregoing observations.

I have the honour to be, Gentlemen,

Your most obedient servant,

GEORGE STEPHENSON.

REPORT, No. 5.

Mr. Grantham's Letter to Sir John Burke.

DEAR SIR JOHN BURKE,

The papers and my letters inform me the efforts that are making to raise the question of draining the Shannon, and I observe the discordance that exists. The individuals who have agitated the matter are evidently very imperfectly informed, and are misleading the public; and my friend Mr. Williams has taken an unnecessary alarm, that the navigation will be ruined. A complete misconception of my Survey appears to be getting abroad, and I wish it to be better understood. That Survey was made under the

guidance of my lamented friend Mr. Rennie, upon the principle of his great English drainages. It embraces the two objects of improving the navigation and making a trackway along its borders, and it enables the bog and low lands along its borders to be drained and better cultivated, and it opens the outfall of all its tributary rivers.

I have written to Mr. Stanley to inform him how the Survey originated, and the principle upon which it was conducted. This I hope will enable him to appreciate the wild theories that are likely to spread themselves, and injure one of the best objects that ever was proposed for the welfare of this part of Ireland.

I agree with my friend Mr. W., that the navigation is of the first importance, and nothing ought to be done to injure it. But I say, at the same time, that both objects should go together; and a proper system of drainage can alone make the river navigable as it ought to be.

I think the very small loan to Ireland totally inadequate to such objects as the Shannon. Whatever is done with this river ought to be on the most extended scale. It should have its own act of parliament. Its acreable tax should pay its works and maintain them. Years and years must pass over ere it can be completed. But no peddling or half measures should throw additional incumbrances in the way of its future improvement. If the subject should go on,

the most public investigation should be given to it. The Mr. Rennies have my Report, and all the correspondence between me and their father upon it, and they are fittest to examine the subject, and so I have mentioned to Mr. Stanley.

Yourself and Lord Clanricarde have seen more of the Shannon than any other gentlemen, and you are sensible how much the country would be relieved by a more rapid discharge of the winter waters. Floods always will prevail, but they ought not to exist for six months at a time. Will you read this Letter to Lord Clanricarde, with my best respects to him.

Dear Sir John, most faithfully,

JOHN GRANTHAM.

REPORT, No. 6.

Minutes of Evidence taken before the Select Committee on Shannon Navigation, July 1834.

Colonel *John Fox Burgoyne*, called in; and examined.

1. YOU are Chairman of the Board of Works in Ireland?—I am.

2. Are you generally acquainted with the river Shannon, and the present state of it?—I have been up the Shannon in a boat from Limerick all the way to Lough Allen, and have had under consideration a great many reports upon the state of the river at different times.

3. Is the river Shannon navigable from its mouth to its source?—It is more or less navigable, but in a very imperfect state the greater part of it.

4. Do you consider that an outlay of money would be desirable to ameliorate the present state of the river Shannon?—I think any outlay of money on the Shannon offers prospects of greater advantages to the country than almost any other public work.

5. Do you consider that any and what great benefits would result to the counties bordering upon the Shannon, and to the country generally, by the improvement of the river?—I think very great benefits will be derived to the country generally, and naturally rather a larger proportion to the counties bordering the river, by the improvement of the Shannon; but I do not think that the benefits would be exclusively confined by any means to the neighbourhood.

6. Do you consider that the towns of either Dublin or Liverpool would or not derive any benefit from such improvement?—I think both would, particularly Dublin.

7. A considerable benefit?—Yes, considerable; and also Limerick.

66. The answers you have given have all been in reference to the plan laid down by Mr. Rhodes, diminishing the number of locks and altering the system of navigation on the Upper Shannon; supposing the system at present adopted to be retained, and the same number of locks left in the same places,

do you think that a smaller expenditure than that which Mr. Rhodes has described as necessary, supposing his plan to be adopted, would be sufficient to render the navigation of the Upper Shannon tolerably good, as much as is necessary according to the present state of the trade?—To put the present system of navigation in a better state, a very reduced expense would suffice.

67. Are you prepared to state to the Committee whether you would be disposed to recommend the adoption of the latter plan?—I should prefer the grand plan if we can get the means, but otherwise the other plan would be desirable.

Mr. *Thomas Rhodes*, called in; and examined.

708. You were employed by the Board of Works to visit the river Shannon, and report upon it?—Yes, I was.

709. There are some reports upon the table to which your name is attached?—Yes.

710. Have you seen any cause to modify any opinion expressed upon those reports?—No, I am of the same opinion.

711. You were directed to consider the Shannon question in a double point of view, in respect to the drainage and in respect to the navigation; supposing you had been directed to consider it with respect to the navigation solely, would that have made any alteration in the recommendation you made?—*None*

whatever ; the drainage or reduction of the water in the winter season is necessary to improve the navigation.

712. In the plan you have proposed for improving the river Shannon, you contemplate the making of locks different from those at present in use, and suitable for a larger class of boats, particularly steam-boats?—Yes ; by reference to my report, it will be seen that I propose to construct the locks 130 feet long, 30 feet wide, and at the least to have a constant depth of water at all times of six feet six inches.

713. Can you state what reason induced you to recommend the construction of those larger locks?—I consider the present locks much too small for the present trade, particularly with regard to steam-boats.

714. Do you mean to say that the steam-boats at present upon the Shannon find any difficulty in passing the locks at present in existence?—Yes ; the small steam-boats pass the locks, but with difficulty in summer, and the larger ones cannot ply beyond Lough Derg, or between Killaloe and Portumna.

715. The steam-boats that pass through now, do they find any impediment?—Yes, they do, particularly through the canals and over the shoal parts of the river.

716. From the construction of the canals?—Yes, from the improper formation at first, also the bad state of repair.

717. Do you mean to say that there are such impediments that no alteration in the canals, short of making new ones, could adapt them for the present steam-boats?—By reference to my report, it will be seen that the depth of water in summer time is not sufficient to get the boats along the canals, as over the sills there was found only three feet nine inches to five feet six inches water, and there ought to be six feet; and the canals are greatly choked up by the side slopes slipping and washing down to the bottom; also the improper channel at the various shoals.

718. Do you mean to say, that supposing the present canals were repaired, that the steam-boats could not get through that are used at present?—Yes; it would admit the small steam-boats, but not the large boats, or those drawing from three feet nine inches to six feet draught of water.

719. Distinguishing between the steam-boats in the Loughs and those upon the Canal, the Committee are alluding to the small steam-boats?—Even the small boats cannot get through the canals; in some places there are obstructions in the canal, they are greatly choked up; there are not more than four feet in the canals, and in some places, and along the shoals, considerably less in summer time.

720. They do get through now?—Yes; but they are frequently obliged to empty their boilers of water.

721. How can they work when the boilers are

empty?—They tow them through the canal, and then load or fill the boilers again.

722. Is that owing to the sills?—It is owing to the narrowness and shallowness of the canals and various cuts.

723. What is the depth of the water through the present canals, generally?—As I have already described; some places five feet, others four feet three inches, three feet six inches, and still less.

724. The shallowest depth?—I do not recollect; it is down in the report, and marked on the section.

725. You think it is impossible to improve the present canals, so as to admit of a passage with convenience without unloading even the steam-boats that at present ply?—I do think it possible, by the alterations suggested in my report.

726. In the plan you propose, do you contemplate that the larger steam-boats that ply upon the Loughs, should ply the whole way?—Yes; from Killaloe up to Lough Allen, or particularly as far up as Leitrim.

727. Supposing it was not considered necessary to improve the navigation for the passage of such very large steam-boats as that, and that the smaller class was still used for canals as at present, would that make any great alteration in your plan?—No, I do not think it would; only repairing the canals, reducing the shoals as suggested in my report, and keeping the works in a good state of repair; they would also require to make a dam at each of the falls,

so as to keep up the water in summer time to a defined height, and let it escape during the floods.

728. Would you require an entire new system of locks for the passage of a smaller class of steam-boats than those that ply upon the Loughs?—Yes; in some parts some of the sills are too high; they do not correspond with each other, that is, the upper sill of one lock with the lower sill of the next; and in other cases I would take the locks down altogether, being of no use when regulated by the dams or weirs.

729. In all cases, and under all suppositions, you would require weirs to be placed?—Yes; at all the different falls.

730. For the sake of the navigation solely? Certainly; there is not a weir upon the whole length of the Shannon for the due regulation of its navigation.

731. In the report that is on the table, you estimate the total expense of the improvements you suggest on the river Shannon, at 153,163*l.* 2*s.* 10*d.*?—Yes; precisely that sum.

732. That contemplates a larger class of steam-boats than at present ply upon the canals?—Yes, it does.

733. Can you state to the Committee what would be the expense of improving the river Shannon between Limerick and Lough Allen, in such a manner as that the depth of water should be the same as is

specified in the contract between the Grand Canal Company and the Directors of Inland Navigation in 1806?—85,625*l.* 9*s.* 3*d.*

734. In the larger sum, you include the expenditure for some bridges in a dilapidated state, not connected with the navigation?—Yes.

735. In the smaller sum you include no bridges whatever?—No.

736. The fact is, it is not necessary to improve any of the bridges for the steam-vessels that at present ply upon the navigation?—No, not the bridges across the rivers, only those across the canals, as mentioned in the report.

737. What would be the saving in carrying one plan into execution compared with the other?—67,537*l.* 13*s.* 7*d.*

738. Could you say what the alteration of all the bridges and the building of new ones, as proposed by you, amounts to, according to your present plan?—

	<i>£.</i>	<i>s.</i>	<i>d.</i>
Altering Killaloe bridge	567	19	0
Rebuilding Banagher bridge	4,774	8	11
Altering the wooden bridge at Shannon harbour.....	550	0	0
Altering and underpinning Shannon bridge	2,442	0	0
Rebuilding Athlone bridge.....	5,742	0	0
Altering bridge at Jamestown.....	1,092	0	0
	<hr/>		
	£15,168	7	11
	<hr/>		

739. Does it include the improvements upon the Athlone canal?—Yes, it includes the canal.

740. What is the bridge itself?—It is all connected together, and the weir.

741. By looking over those estimates, you could see what relates only to bridges, and deduct it?—Yes.

742. Are you prepared to state that now?—It will take me some little time to extract from the report and estimate.

743. You will put in as soon as you are able a statement of how much of the larger of the two sums you have just mentioned relates to bridges alone?—Yes, I will.

744. Do you consider it necessary to alter or improve any of the bridges if the navigation is to be kept at the depth of six feet six inches?—It is necessary in all cases that the bridges should be repaired, and if you go upon an extended scale it is necessary to reconstruct and alter the six bridges, viz. : at Killylloe, Banagher, Shannon Harbour, Shannon Bridge, Athlone, and Jamestown, near Lough Allen.

745. What objects have you in constructing those bridges?—On account of constructing the weirs across the river, and deepening the river channel.

746. It is part of the plan relating to the weirs?—Certainly, and to allow the water to escape with freedom.

747. If you keep the weirs in the minor plan must

you not also keep the bridges?—No; probably it is not so necessary.

748. If you say it is necessary to the keeping the depth of water at six feet six inches, and the lesser plan contemplates that depth of water, surely the bridges must be considered?—Why, not so.

749. Could you have the six feet six inches without the weirs?—Certainly not.

750. You said you could make the present scale perfect without altering the bridges?—*It is necessary to repair them, but it would not make the work so perfect.*

751. Do you not consider that the bridges produce a considerable backwater?—Many of them do, by the archway being too small, and cause inundation to the lands.

752. And one of the objects you have in view by projecting those weirs is to prevent too great a backwater?—Yes, by producing a greater area the water is allowed to pass off with more freedom.

753. You consider the smaller plan would be imperfect unless the bridges are repaired?—It appears absolutely necessary that the whole of the bridges should be repaired; but I should suppose these belong to the counties at large.

754. Are you prepared to state what that is?—I will extract from my estimates and put it in.

755. What would be the effect produced by either

of those plans to which we have just alluded, upon the mill sites on the river Shannon; would there be better mill sites than before?—Much better, as the effect would be more constant and uniform.

756. In the course of your survey of the river Shannon, can you state to the Committee whether the shoals which impeded the navigation were such as are produced by floods coming down from the tributary rivers, or were they of long accumulation?—They appear of long formation, their composition being chiefly lime-stone, gravel and clay.

757. If once removed they would not cause any great expense in repair?—No, they would not.

758. Upon what basis do you found the necessity of having a larger class of steam-vessels than that which exists?—By improving and forming a better line of communication, thereby conveying passengers and goods with more expedition than exists.

759. Are you aware of any navigation in the world where so large a class of steamers is necessary as you propose?—Yes, several parts: upon the river Thames, the Clyde, the Humber, the Ouse, and various other rivers, also the Caledonian Canal, &c.

760. Are you aware that the turns in the river Shannon are so abrupt that it is doubted by those who at present trade upon that river whether they would use a larger class of steamers, even if the locks were sufficiently spacious to admit them?—I think the river is sufficiently large for a much larger class

of steamers than even the largest that plies on that river.

761. Are you aware that the turns are so abrupt?—They certainly appear abrupt in places, but they will not be too abrupt, when the suggested improvements are carried into effect, to take the largest class of steamers; *even the largest that ply upon the Thames might navigate the most parts of the river Shannon.*

762. Are you aware that the larger class of steamers can only be used with coal, and the smaller class is worked by means of the consumption of turf?—I do not know any that use turf altogether for generating steam, not upon the river Shannon, that I am aware of; if they do it is very recently.

763. You still have a strong opinion that it would be absolutely necessary to erect the weirs you propose at certain points?—Decidedly so.

764. To improve the navigation?—Yes, it is the only and effectual means to keep the water at the different levels to somewhat an uniform height.

765. Could you state to the Committee shortly the grounds upon which you advocate these works?—In summer time the water is too low, caused by the winter floods descending and scouring out the shoals of gravel situated at the falls, where the weirs ought to be erected, and in the summer-time the water cannot be kept high enough to admit the vessels through the canals; it is therefore necessary to construct capacious weirs, as suggested in my report, to keep the

water at some defined height, and also to allow the winter floods to escape with greater facility.

766. Would those weirs prevent the adjoining lands being irrigated or flooded during the winter?—No, they would not entirely prevent it; and if those lands are subject to be flooded for six to seven months in the year, these weirs would be a means of taking it off in three to four months, or even much less time, and it would irrigate the land for a shorter period, and it is my opinion would produce better crops of grass, &c., both in quantity and quality.

767. Where are there any weirs built similar to those you recommend?—Upon almost every navigable river: there are some upon the Mersey and Irwell Navigation, Ayr and Calder, Calder and Hebble, river Ouse, river Weaver, and many others.

768. Precisely upon the same plan?—Yes, upon the same principle.

769. Is it a new theory of yours?—No, it is nothing new; only the sluices, which I should recommend to be self-acting.

770. In the rivers you allude to, are there falls in those rivers?—Yes, precisely similar to the Shannon.

771. Have you seen any weirs of that description with sluices in them?—Yes, I have constructed them. By obtaining the present section of the river, viz. depth and width, and then making a weir spacious enough in area to the section of the river, that

would enable the water to escape with the same or greater facility.

772. Do you consider that the improvements you suggest on a large scale on the river, would offer any lengthened interruption to the navigation of the river?—Not the slightest.

773. Would the smaller plan offer any interruption?—Not the slightest, if the dams were constructed and the shoals deepened.

774. With a larger description of steamers do you calculate upon any agricultural produce of the country being carried down in them?—There appears little doubt when once the communication is complete, and steamers introduced, trade will increase in these parts rapidly, both as regards produce of the country, and also in passengers.

775. It would materially affect the trade if you had those larger steamers upon the Loughs, and then had to change to smaller ones?—Yes, larger ones would tow other vessels up and down and carry produce at the same time; the small ones are not particularly adapted for such trade.

776. Do you calculate upon the larger vessels carrying produce, pigs, and so forth?—Undoubtedly.

777. You have said that neither of the plans you have recommended would cause any interruption on the Shannon; in the small plan, do you contemplate altering some of the existing locks?—I would take

some of them away altogether, which would be useless by the projected improvements.

778. Even upon the smaller plan should you take away every lock?—Not every one. I should alter some and take away others, as described in my report.

779. As far as altering locks, that would be an impediment to the trade?—A very short period.

780. How long?—Not above a week, particularly the middle part between Portumna and Athlone; the upper part between Lanesborough and Leitrim would require longer time. It would be merely taking some of the lock walls down and altering some of the sills; that would not afford much interruption.

781. If boats drawing more than four feet six inches cannot navigate either the Grand or Royal Canals, why would you make the Shannon a navigation for boats drawing six feet, when the great trade of the country bordering on the Shannon would probably be diverted towards Dublin and Liverpool?—Upon the Grand Canal the locks were made for six feet water over the sills, and also the Royal Canal; therefore they ought to be the same depth.

782. Can you state that of your own knowledge?—Yes.

783. Ought not the Grand Canal Company to remedy those interruptions when they occur?—I consider it would be their interest to do so.

784. Cannot you consider a very extensive branch of trade totally independent of the Grand and Royal Canals?—Yes, certainly.

785. Do you not think by far the greater part of the trade would still always go either into the Grand or Royal Canal?—Yes, I do.

786. Would you give your reasons for that answer?—Because it is more direct to England by way of Dublin; at the same time a considerable part of the trade would go down to Limerick, because the dues would be cheaper that way, and by means of steam the voyage could be performed with more expedition.

787. It would be cheaper to send them up the canal to Dublin than to ship them at Limerick for Liverpool?—I cannot say that it would or would not, as it depends upon circumstances.

788. Do those lighter vessels that now navigate on the river ride safely upon the Loughs?—Yes; I never heard to the contrary.

789. There is no danger from the smallness of the vessel?—No; they are the same sized vessels, made according to the dimensions for passing the present locks, and do not draw so much water, only about three feet six inches.

790. There is no danger arising from the smallness of size?—I should think not.

791. When there is a high sea?—No; at such times they are too small for towing vessels against a head-wind.

792. Are not the Loughs subject to squalls that are dangerous to small vessels?—A steam-boat built according to the dimensions of the present sized locks is safe enough to navigate the Loughs, although not at a sufficient quick speed for the general trade.

793. Do you consider that the small class of steamers at present constructed for the canal are safe upon the Loughs?—Yes, quite so.

794. Why would you suggest an entire alteration of the Shannon, and for the reception of a larger class of vessels, when another class may be used at less expense?—The larger class being more powerful would go quicker and answer better for towing.

795. It is a question of speed?—Yes, both speed and for towing vessels.

796. It is merely a question of speed?—Speed, and towing vessels with more expedition.

797. Is it not a mere question of speed the sized vessel you shall have?—It is both speed and tonnage; a small one would not carry the same.

798. Will not a larger vessel necessarily tow a greater number of barges?—Yes, certainly.

799. Would it not be perfectly possible to carry on the same amount of traffic that could be carried on by larger sized steam-boats, by the smaller sized steam-boats, even if an additional one was required?—Yes, it is only employing a greater number: the larger the vessel the more commodious and pleasant she is for passengers and the stowage of light goods,

and I am of opinion would pay better than small steamers.

800. You said a while ago it would occupy about a week to improve the locks; do you mean to say that with all the improvements of the Shannon necessary to make the present navigation perfect, the navigation would not be interrupted for more than a week?—No more, particularly the middle part.

801. Supposing any improvements to be done on the river Shannon, do you think that the works should be done under the superintendence of the Board of Works?—Decidedly.

802. Why so more than under a private company?—I think they would be better performed and better looked after.

803. Why do you think they would be better performed?—The money would be paid more regularly, and there would be better inspection, and the whole carried on in a more systematic manner.

804. Do you think that the Board of Works would have to contend with any difficulties in repairing the works when executed?—No; not any that I am aware of.

805. Do you not think inconvenience would arise from having to wait for the vote of the Irish estimates?—Yes; a difficulty might arise in that case.

806. Are you prepared with any thing to meet that difficulty?—No, I am not.

807. You are aware of the conditions under which the Middle Shannon was transferred to the Grand Canal Company, as to the depth of water and other conditions?—Yes.

808. You have made a report that those conditions have not been fulfilled?—Yes, I have.

809. Are you prepared to state, merely with this object in view, what sum of money it would require to put the navigation into the condition in which they covenanted to put it, laying out of the question all your other projects?—I have stated that before; it would take 34,350*l.* for erecting weirs, deepening shoals, the various cuts, repairing locks and gates, &c.

810. Excluding all consideration of removing the locks, but merely putting the locks and navigation into the state in which the Grand Canal Company ought to have left it?—I am not prepared to answer that question; the particulars are set forth in my report what is required to be done.

811. Do you consider that 500*l.* would come near to it?—I should think it would take 20,000*l.* or upwards to do the work as specified.

812. Have you seen the plans and sections by which the Grand Canal, at the time they took possession of the Shannon navigation, contemplated to attain the depth of six feet six inches water, as they contracted to do?—I have seen some of the plans and sections.

813. Do you think them insufficient to attain the depth that they contracted to afford?—I do.

814. What alterations do you think would be required to give the depth that they contracted to give?—To erect weirs at the different falls, so as to regulate the water, and keep it near some defined height.

815. Which they never contemplated doing?—I suppose not; there are none erected at present.

816. Then if the Board of Works were given the power to enforce the completion of that contract, and to insist upon the Grand Canal Company having a depth of six feet over the sills of their locks, and six feet six inches depth of water in the canal, it would be necessary for the Grand Canal Company to erect weirs at certain places?—I think it would, as they cannot make a perfect navigation without them.

817. If the Grand Canal Company had prevented those injuries that arise from the falling in of the sides, could a small sized steamer go to Dublin?—No; the locks are too small for those steam-boats that ply on the Shannon navigation.

818. In your first report, you have given a report of the present state of Portumna bridge?—Yes; with plans and sections for rebuilding the same.

819. Have you made any estimate of the sum necessary to repair it?—Yes, I have; and also for rebuilding it.

820. Do you think that the repair of Portumna

bridge is necessary for the navigation?—Yes, I think so; it is in a very dilapidated state. I sent an estimate to the Board of Works; I have not a copy of it with me.

821. Have you seen the plans that were drawn up at the time that the Directors-General of the Inland Navigation proposed to undertake the works to open the navigation to Lough Allen?—I have seen some of the sections, and also some of the plans.

822. Do you know the depth of water contemplated by those plans?—No, I do not remember the scale or size contemplated.

823. Do you think there is any plan short of the one you propose, which you estimate to cost 51,273*l.*, that would give six feet six inches water between Athlone and Lough Allen?—*No; I think no other plan would give that depth of water to make it an efficient navigation.*

824. In proposing that a larger class of steamers than is at present in use should navigate between Lough Allen and Limerick, do you consider that a great trade could be carried on in passengers and light articles, or do you consider that the greater part of the trade would be heavy and lumbering articles in which speed was not necessary?—I should say passengers and light goods; also towing other vessels with bulky articles.

825. Do you expect to get many passengers from Leitrim to Limerick?—From Carrick, Boyle, and

country towns and villages adjacent with the Shannon, a constant intercourse would be kept up by steam-boats, so that the transit of goods and passengers would be cheap and expeditiously conveyed from the different places along the Shannon.

826. In your reduced estimate, do you contemplate erecting swivel bridges across the canals?—Yes.

827. You include those in your estimate?—Yes, certainly.

828. At Athlone and Banagher?—Yes.

829. You have not made any survey or any examination of that part of the Shannon between Killaloe and Limerick, since your first report was published?—No, I have not.

830. You are not aware of the works completed by the Limerick Navigation Company since that?—I have not particularly noticed them, but I have seen some works going on at O'Brien's Bridge; the deepening some part of the navigation, and putting up some of the lock gates along the line.

831. Are there any imperfections in the navigation existing between Limerick and Portumna?—There is a bar a little below Portumna at Derry Island.

832. Are there any important imperfections in the navigation between Limerick and Portumna?—Nothing material or of great extent; there are some rocks sticking up in Lough Derg, in various parts, that require lowering; also beacons required in a number of places, as described in my report.

833. Do you consider that if the improvements were effected on your reduced scale, that there would be a considerable sum of money thrown away, supposing at any future time it was thought advisable to extend the scale of the navigation?—It would not be exactly thrown away, but I think the extended scale would be decidedly the best in the end; upon such a grand river as the Shannon, it is very desirable to carry the proposed improvements, as described in my report, into effect.

834. Would not the sum expended upon it be exactly the sum thrown away; it would not tend to the improvement under the greater plan?—No, it would not do altogether for the greater plan; the weirs would do, but it would be necessary to build larger locks, and make the sectional area of the canals larger, as shown in my report, plans, &c.

835. Do you consider there is much apprehension of danger to the drainage, that might result from the improvement of the Shannon?—It would facilitate the drainage, also a reduction of the winter floods; because in winter time, when the banks are covered, it is difficult to navigate vessels, owing to the banks being covered, unless they are towed by steam; between Mellick and Athlone, I calculate that 50 square miles are inundated every year, for a considerable period.

836. Do you consider lowering the Shannon to the summer level would injuriously affect the navi-

gation of any of the tributaries of the Shannon, such as the Brisna, the Suck, or the Boyle river?—It would improve them, because the banks along them are so much inundated it is difficult to find the channel. It would also improve the mill sites on them.

837. Do you consider that your extended plan would in a great measure facilitate the reclaiming of the bogs in the neighbourhood?—I think it would considerably.

838. Do you consider that the reclaiming the bogs on any extended scale is practicable, without some such plan?—I think it would be a very great improvement by taking the water off them, particularly along the verge of the river, as proposed in my report; the weir at Jamestown is a very great evil, and inundates the country about Carrick, Boyle to a very great extent.

839. Are you sufficiently acquainted with the Shannon to state at what time the floods generally take place upon the Shannon?—According to my observations, and according to the registry kept at Limerick and along the line of the Shannon, it is about the months of September or October.

840. But is it not very liable to floods when the people have their hay half made, and to have it carried away in the night?—Yes, it frequently happens, and occasions great loss of property.

841. Is the herbage very luxuriant on the borders of the Shannon?—In some parts; there are great

districts of bog along its banks, but this is chiefly about the middle part.

842. Unless a great deal of money is expended upon the Grand Canal, must they not unload the boats, supposing your extended plan is adopted, in going up to Limerick from the canal?—It will be necessary to load the barges to a certain draught of water for passing the Grand and Royal Canals.

843. If the navigation was improved, roads might be made to places to which no access can be had now?—Yes, in a great many parts.

844. It would be a difficult thing for the Grand Canal to make it fit for a larger class of steamers?—It would be a great alteration; next to making a new canal.

845. You do not propose that the steamers should ascend the canals?—No; they would tow the barges to the entrances of the canals, and then they are towed by horses to Dublin, &c. &c.

846. Do you consider that, supposing the navigation of the Shannon was improved, much greater communication by passengers would take place than does at present?—There is not a doubt of it.

847. Do you know of any existing intercourse between the upper part of the Shannon and Limerick?—I do not. I think there would be a great intercourse by these improvements; it would increase and grow up considerably; when I was engaged upon the Caledonian Canal, there was no steam-boat plied from

Glasgow to Fort William and Inverness; two or three years afterwards there were three or four, and the inhabitants of Fort William are not above 400; therefore I am led to suppose, by what I have seen in various parts of England and Scotland, that if the steam-boats were introduced upon the Shannon up to Boyle and Carrick, that it would increase the traffic very much.

848. The weir you speak of, as having been so injurious to the navigation, how long has it been erected?—I cannot tell. I should think many years; it appears to have been raised very recently.

849. What depth of water do you contemplate for the small steamers?—Six feet six inches in the canals, and six feet upon the sills of gates; they would have the same draught of water in both cases for the large and small canals.

850. In one case you would consider it advisable to increase the breadth, and in the other not?—The length of the lock should be 130 feet, and the breadth 30 feet, and six feet over the sills in the driest seasons.

851. That would be only in the locks?—Yes.

852. The navigation would remain the same?—Yes, precisely in depth six feet six inches, and the section as described in my report.

853. Do you not consider that it is advisable that the navigation of the Shannon should be on a larger scale than either of the canals, on account of the ne-

cessity of employing steamers as tug-boats on the Shannon, which does not exist on the canals?—Yes, it should.

854. If you were asked on what scale you would consider the present navigation of the Shannon between Lough Derg and Lough Rea, you would say four feet three inches?—No, I should say six feet six inches to make it efficient.

855. What do you consider at present existing on that line of navigation is the minimum depth of the scale?—In some parts it is not above three feet six inches; the particulars are stated very fully in my report.

856. Are you aware of the depth of water that the present steam-tug-boats draw?—Three feet six inches to three feet nine inches.

857. For the purpose of conveying passengers, would it not be desirable to have a larger class of steamers than that?—You might have steamers of a very large class that draw no more than three feet six inches; it depends entirely upon the build of them. The lighter you can make them draw the better; meeting with less resistance they skim over the water, and do not require so much power to propel them as a large draft.

858. Will you have the goodness to draw out an estimate of what expense would be required to obtain five feet of water over the sills of all the locks from Killaloe to Lough Allen, marking how much of this

sum would be applicable in future, supposing six feet should be afterwards required?—It will require the sum of 71,354*l.* 11*s.* 3*d.* to make the navigation efficient from Killaloe to Lough Allen; the Limerick navigation is in the hands of the City of Dublin Steam Navigation Company. The greater part of this sum would be applicable in case of increasing it to six feet water.

859. Do you consider that the difference would be very great?—No, it would not be very great; but five feet would not answer so well as the large scale; it is reducing it too much on so fine a navigation as the river Shannon.

860. What is the depth of the present Limerick navigation?—Six feet over the sills.

861. At all events, you are prepared to say that the saving of expense would not be equal to the loss of benefit from the diminution of the depth?—Certainly.

REPORT

OF

THE COMMITTEE

ON

THE WESTERN RAIL-ROAD

AND THE

LAKES OF GALWAY AND MAYO NAVIGATION.

AT a Meeting, held in the Oak Room at the Mansion House,

Colonel WILSON in the Chair,

It was resolved that the following Report, which was handed in by the Secretary, be adopted and printed :—

REPORT.

The Committee appointed by a General Meeting, held at the Mansion House on the 11th of June, 1831, to revise the Resolutions, and to give their opinion upon the practicability of the Plan then brought forward by Mr. Bermingham, report as follows :—

That the Plan proposed for consideration may be resolved into two distinct heads.

One, setting forth the advantages which would result from *connecting Galway and Killala by inland navigation.*

The other, the benefits to be derived from the formation of a Rail-road between Galway and Ballinasloe.

These projects are so different in their nature that the Committee think it necessary that their respective merits should be separately considered.

In order to execute the first of these plans, it is proposed to open the communication from the sea at Galway into lough Corrib, and to remove the obstructions to navigation which exist in that lake.

To continue the junction thus made of the sea with lough Corrib, by canals, connecting it with lough Mask and lough Cara, which may be done for a moderate sum, and hence following the course (which Providence seems to have pointed out,) through lakes Cara, Cullen, and along the river Moy, (should there be sufficient funds) to render it practicable for vessels to pass from Galway to Killala.

It does not appear that the formation of this canal would cost much, so far as lough Cara, which comes near to the town of Castlebar; the remainder of the proposed line of communication with Ballina would be attended with much more expense; the object to be attained thereby does not, however, appear of such immediate importance: although it should not be forgotten, that such line would pass nearly *through*

the centre of the province of Connaught, that it would connect the lime-stone districts with those where granite forms the substratum, thus bringing the marble quarries and the mines of those districts into operation, and also *affording a facility of conveying sea-weed from the coast to the interior* ; and that it would also lower the waters of the upper lakes, and thus render many acres fertile and productive which are now generally flooded.

The work thus pointed out might be commenced immediately, as little preparatory arrangement would be required.

Your Committee having made diligent inquiries into the resources of Cunnemara, Joyce country and Mayo, are informed that a *vast quantity of sea-weed*, which heretofore was converted into kelp, is now, in consequence of the application of salt and barilla to that purpose, used for manure ; they submit, therefore, that if the power of procuring this manure easily, and at small cost, be extended along the line of waste tracts adjoining the lakes, it would *open new resources to the country*, by offering an inducement to their cultivation, and would thereby render the inhabitants of those parts more independent than they have hitherto been. The navigation of the lakes by steam-vessels would thus have a decided effect to encourage cultivation and traffic in those parts. Your Committee are the more assured that such would be the case, *from the good effects admitted on*

all hands to have arisen from the exertions used by Government, in opening roads through the interior of this district, which comprises a space of at least sixty miles square on the west. They submit, that if the opening of roads for the internal communication of these districts has been thus productive of considerable benefit, not only to the district but to the revenue and the port of Galway, (and that it has been so is signally proved by this fact, of which they are informed, namely, that the trade and revenue of Galway within the last few years have increased fourfold,) a cheap communication by water, connecting those very roads, must be of the highest importance, and attended with the most salutary effects.

Your Committee admit that the funds for this undertaking must, for the present, in a great measure, be advanced by the state ; but as it is reported that a large sum of money will be allotted for the improvement of Ireland, *some part of it should be applied to the purpose of improving the natural resources of the country, and of executing a work which, at a small annual expense for repairs, would be of permanent and general advantage.*

It appears to the Committee, that as the great advantage arising from the improvement of the navigation of the lakes would accrue to the landed proprietors in their neighbourhood, it would be just and advisable to procure some legislative enactment,

which would enable the Company to assess those proprietors for a share of the expenses, *either by taxation proportionate to the advantages they would obtain*, or by rendering it compulsory upon them to sell or let certain portions of land, bordering on the lakes, in order to ensure the success of the plan proposed.

Your Committee submit, *that if internal inland navigation, with all its disadvantages and delays, has been thought so important, that two great canals have been constructed, one leading into the west, to Ballinasloe, a distance of 70 miles, at the expense of more than a million of money; of how much greater importance must it appear to unite the port of Galway with the harbour of Ballina, on the one side,—a distance of about 60 miles,—and with that very canal at Ballinasloe on the other side; thus giving a cheap and expeditious communication by steam through the west, for nearly 90 miles, at an expense not exceeding 250,000l., one-fourth of what the present canal has already cost.*

With respect to the second part of the proposed plan, namely, *the rail-road*, your Committee report, that since their last meeting they have had an opportunity of consulting with Mr. Stephenson, a gentleman well known, whose acquaintance with every matter relating to rail-roads and steam-carriages is not equalled by any other man in existence; and they are gratified in being able to state, that having

explained the details of the plan proposed, and having described the nature of the country through which the rail-road is to pass, Mr. Stephenson has declared his opinion that the plan is highly practicable, and that it might, according to the statements laid before him, be performed for the estimate proposed for a double line of rail-road, namely, 120,000*l.*

Your Committee beg to state, that in reference to the distance and line of road through which the railway now proposed should be carried, it is the opinion of Mr. Stephenson, that the town of Loughrea, containing as is stated 5000 inhabitants, should be the point to which the road ought to be carried for the present; they, therefore, are of opinion, that the connexion of that town with the port of Galway should be first attempted; at the same time, they cannot avoid stating their decided opinion, that the importance of communicating with the Grand Canal appears so great, that they are bound to recommend the continuation of the railroad to Ballinasloe, as does Mr. Stephenson, should the Canal Company not succeed in their endeavour to connect those towns by canal.

Your Committee having made inquiries respecting the trade at present carried on between Loughrea and Galway, have been informed, that taking into calculation the trade in corn, salt, iron, foreign and home timber, and general merchandise, in the article

of manure, which is very considerable, together with that of coal and turf, barilla, slates, and fish, a most important, but now much neglected article of traffic, they will be fully warranted in setting down the trade between those places as at 30,000 tons per annum, the cost of which, at the present rate of land carriage, viz. 13s. 4*d.* per ton, will form an item of 20,000*l.* per annum, chargeable upon this part of the trade of Galway. Your Committee are also informed, that the transit of passengers between those two towns is very considerable, there being three public coaches at present plying between them, the income from which cannot be set down at a lower rate than 2000*l.* per annum:—without, therefore, reckoning on any increase of passengers, which would be highly probable, your Committee may fairly calculate on this sum being annually made by passengers alone; besides which, they contemplate with pleasure the great advantage that would arise from the ease with which the poor can be taken from market-town to market-town, with their various articles of small merchandise of which they wish to dispose.

Your Committee having consulted Mr. Stephenson as to the cost of keeping the rail-road in repair, and the necessary expense attending thereon, and having compared his estimate with that already put forth to the public, are of opinion, that a saving of more than one-half the cost of conveyance between the

town of Galway and Loughrea might be saved to the public, if the measure now proposed be carried into execution; and that such a measure would open a large field to the speculator, which would be at once productive of great individual profit and general benefit.

Your Committee conceive, that rail-roads being as yet little known in Ireland, it may be necessary to enter into some details as to the expenses of such an undertaking; they, therefore, beg leave to lay before you the following result of their inquiries and investigations relating thereto.

The expense of outlay, supposing the line connecting Galway and Loughrea be alone adopted, is calculated at 60,000*l.*, the interest of which, at 5*l.* per cent., would amount to 3000*l.* per annum. The cost of keeping an engine in repair sufficient for the trade, as stated by Mr. Stephenson, is as follows:—

	£.	s.	d.
One ton of coals per day	1	0	0
An engine man and boy	0	5	0
Twenty men a day on the line, at 1 <i>s.</i> per day	1	0	0
	<hr/>		
Making the sum of.....	£2	5	0
	<hr/>		

Supposing, therefore, the tonnage to be 100 tons per day, Mr. Stephenson calculates that about 1*l.* 2*s.* 6*d.* per day may be added for wear and tear, making a

total of 3*l.* 7*s.* 6*d.* per day, or 1000*l.* per annum. For engineering, agency, &c. say 1000*l.*, making a total of 5000*l.* per annum, being the whole amount of outlay, including interest of capital, so that the saving to the public, on the carriage between Loughrea and Galway, will be the difference between this cost and 22,000*l.* per annum, the present cost of carriage as before stated, making a total saving of 17,000*l.* per annum to the public.

Your Committee must here advert to the advantage to arise from the communication between *Dublin and the port of Galway*, which it is the object of the present railroad to effect. Even for the purpose of emigration, great advantage to the poor would arise from the facility thus afforded ; and when they take into consideration the great advantages likely to be derived from a junction with *Mr. Williams's steam navigation on the Shannon*, they are justified in calling the attention of the people of *Limerick* pre-eminently to this plan.

Your Committee have been informed that the landed proprietors, through whose property the proposed railroad is to pass, have agreed not to make any charge for the ground which may be required for it ; and that many of them have determined to form the line and level the country at their own expense, thus showing that they not only take a real interest in the plan, but consider it as calculated to be highly productive in its results.

Your Committee regret exceedingly to find that a most material point has as yet been overlooked and unattended to ; namely, the raising of a subscription to defray the expenses of a regular examination of the country, without which your Committee find it extremely difficult to form a report ; cursory examinations, such as have alone been as yet made, although useful in forming a general opinion, being not sufficiently accurate to authorise a definite and satisfactory decision.

Your Committee are therefore of opinion, that the first step which should be taken is to raise money for an accurate survey. Secondly, to *obtain the countenance and promises of pecuniary support from the Government*. Thirdly, to make up by shares the remaining costs of outlay. These once completed, your Committee are of opinion the work might be begun even without an act of parliament. They further suggest, that whilst the surveys are making, the formation of the railway and the construction of the carriages may be undertaken, and the road be formed, as soon as the line of country be once determined on.

Your Committee will lament if the summer be allowed to pass away without a public work of this description, so calculated to give profitable employment to numbers, being undertaken at this time, when so many wretched beings are in a state of starvation. This would certainly be far above mere charity, for

not only would it now abolish, to a certain extent, want, but provide for the permanent improvement of the country.

Committee.

Anthony R. Blake	||	Charles Filgate
Stephen Dickson	||	H. C. Wilson
James S. Lambert	||	Alexander Browne
John J. Bodkin	||	Richard Everard
William M'Dermott	||	Thomas Bermingham
John Blake	||	Dominick O'Reilly.
Patrick Mark Lynch	||	

Evidence and Papers relating to the Western Harbours of Ireland, ordered by the House of Commons, August 11, 1834.

Major-Gen. Sir *Howard Douglas*, Bart., Governor of New Brunswick, was examined, as follows.

As you are acquainted with the passage between this country and America, are there any improvements you could suggest in regard to steam communication, as to the point of starting from this country?—I should think the point of departure should be the westernmost point of the United Kingdom; for, notwithstanding the improvements daily effecting in steam machinery with a view to diminish the consumption of fuel, and so to increase space for freight

and passengers, it is of the first importance to the success of the contemplated measure, and to the productiveness of the enterprize, that the voyage from land to land be made the shortest possible. There can be no doubt that a departure taken from the westwardmost port of the United Kingdom by steam-vessels, either starting from or calling to replenish their coal stores at such port, would be greatly advantageous in all respects; such port likewise to be used as that to which the communications from America are to be made. By the former arrangement branch steam-packets, and other communications would be established with that port. According to the other plan, the steam-vessels starting from Liverpool or Bristol for America, and returning, would call at the western port, and there take up what may offer, and likewise replenish their stores of coal. For all these reasons, it appears to me that the harbour of Valentia would be an important point for departure and arrival.

Are you acquainted with that harbour?—I am not. I have heard the subject much canvassed, and I speak only from a knowledge of the position of that port, and with a view to shorten thus the transatlantic voyage.

How often have you passed the Atlantic?—Twice to Halifax.

Has the establishment of steam between America and England been a subject of much discussion?—

Very much indeed ; it has excited very intense interest, and is looked to with very great solicitude in all the provinces.

Have you thought sufficiently on the subject to suggest any advantages which would be derived in the passage, from avoiding the Channel, in respect both of time and of safety?—The starting-point being from the westwardmost port of the United Kingdom, shortens the voyage so much, that I should say it is obvious there would be great advantages in every respect in establishing that port as the point of arrival and departure of the Atlantic voyage.

The Right Hon. *Maurice Fitzgerald*, Knight of Kerry, having been sworn, was examined as follows :

The Commissioners have reason to suppose that you have turned your attention a good deal to the subject of the communications between Great Britain and Ireland and the Foreign Colonies and Possessions?—I have.

Will you be kind enough to state what induced you to turn your attention to this subject?—It had occurred to me that steam navigation might be made applicable to a communication between the west of Ireland and New York ; and I was led to institute inquiries as to its practicability, by reference to the best authorities, and especially to Americans, who had at that period done more in steam navigation than had been attempted in these countries : the period

to which I allude was about the year 1824. I saw several Americans who were acquainted with the state of steam navigation in America, and who all concurred that it might be made applicable to the passage of the ocean. Amongst the rest, Mr. Rush, the American minister : he had no doubts upon the subject, and considered the case of the Robert Fulton, American steam-vessel, which had passed for some years between New York and the Havannah and New Orleans, as having a worse passage than the passage of the ocean between New York and Ireland.

Do you happen to know the length of that passage ? —To the best of my recollection, the average passage from New York to the Havannah was 15 days ; of course the passage back would be quicker, from the benefit of the Gulf Stream. He considered, and so did all the other Americans to whom I referred, that a coasting navigation was much more dangerous than that across the open ocean (and that line may be considered in a great degree coasting). They spoke especially of the great danger off Cape Hattress, where a very dangerous sea breaks.

Were any steps taken, by calculations or otherwise, with a view to ascertain the practicability of the plan ? —We had prepared estimates and plans, which were referred to authorities in London, Bristol and Glasgow. The size of a suitable steamer was estimated with reference to the quantity of fuel that would be necessary for a passage to New York from the west

of Ireland, and the power of engines calculated, and the probable returns of profit from such an undertaking.

From what sources was the profit expected?—In the estimates which were drawn up in London by a very able commercial gentleman, and were submitted to a committee of merchants at Bristol, the only profits calculated were from passengers; and the charges of passage had reference to the existing charges in sailing-packets between Liverpool and New York, making allowance for the expense of travelling across Ireland; and those returns were considered quite sufficient to justify an outlay of capital.

Did you also calculate upon carrying the mails?—We did not in the first instance reckon upon mails as a necessary consequence of such an establishment; we considered it rather as a probable contingency. That may be in some degree accounted for by our first purpose having been to communicate with New York. It was some time before the question occurred as affecting the interests of our colonies. Our earliest proceedings had reference to a direct communication with New York, and accordingly we principally consulted with United States persons. The Americans entered into the subject with avidity. They held out expectation of co-operation and support at New York, and almost every American with whom I conversed (and they are the majority of the persons who cross the ocean,) expressed their wishes to avail themselves

of such a passage, considering that the greater part of the delay and almost all the danger of the passage was between the west of Ireland and Liverpool.

At the time you are speaking of, had you reason to become acquainted with the existing establishments for the Post-office communications between Great Britain and Ireland and the colonies?—In the course of our investigation I found that the British colonies were dependant on the United States for almost the entire of their communication, whether of passage or of letters ; and on pursuing the subject, I was surprised at the very insufficient manner in which the Post-office communications with our own colonies were conducted. Down to a late period, incredible as it may appear, the mail was conveyed to Nova Scotia by the West Indies.

Were you in the way at that time of hearing complaints, on the part of merchants and others, of the established Post-office communications?—All the colonists and merchants trading to the colonies were loud in their complaints on the subject, and especially persons holding high official situations in those colonies expressed their regret at the unsatisfactory state of the communication, and the sort of dependance on a foreign state in which they were placed in their official intercourse on most important subjects. All parties expressed their anxious wish that such a plan as we proposed for improving the intercourse could be carried into effect. I accordingly laid some state-

ments before the heads of the different departments at home, which obtained their attention to the subject.

Will you have the goodness to state the particulars of the plan which was in contemplation for crossing the ocean, by means of steam; as to the size of the vessels and the supply of fuel, &c.?—It was considered that whatever may be the power of steam, it must remain desirable, in so extensive a navigation, to abridge as much as possible the transit, and if practicable, to divide the passage by intermediate depôts for fuel. With those views, the harbour of Valentia, in Ireland, was selected on the joint ground of its being the most westerly harbour, and one in other respects suitable.

What saving would have been effected by making the departure from Valentia instead of from Liverpool?—I should suppose that the saving, by starting from Valentia, as compared with Liverpool, would be from 400 to 500 miles. The difference between Halifax and New York is about 400, and perhaps the distance between Halifax and Valentia is as much as could well be contemplated by the use of any vessel of reasonable dimensions, say 600 or 700 tons, carrying the necessary fuel.

Are there any means of forming a depôt between Valentia and Halifax?—Upon full inquiry, we have ascertained that for the summer voyage it would be very desirable to have a depôt of coals at St. John's, in Newfoundland.

Is that in the track?—That is in the direct track.

Would the difference between the distance from Valentia, as compared with Liverpool, be 600 miles either for steam or a sailing-vessel?—The difference would be greater with a sailing-vessel. I should assume the average of sailing to make a difference of at least 1,000 miles.

Would a difference to the extent you have stated appear upon the calculation of the direct nautical distance between Liverpool and Valentia?—I should think so. Valentia is a saving of 300 miles, as compared with Falmouth. I would observe that within the parallel of the longitude of Valentia the principal dangers and delays occur. The Americans accustomed to the passage, generally assured me that when they had reached the longitude of the Skelligs, on the outward voyage, they considered nearly half their passage and all the dangers as passed. The dangers of the Channel may be, perhaps, best understood from the statement made at a public meeting at Liverpool, (in contemplation of effecting a canal navigation across Ireland, to escape the dangers of the Channel navigation), where it was stated that the average losses within the Channel amounted to 340,000*l.* annually. In comparing the points of departure, it appeared to us that it was palpably desirable to place the lines of communication for mails as far as possible on that certainty which can be afforded by mail-coaches, and those short passages

between England and Ireland, which are now made almost with the precision of mail-coaches.

In the ordinary voyage from Halifax to Liverpool, are you aware how near vessels approach to Valentia?—In their ordinary course they would pass within 30 miles; but it is very much the practice now to make the Skellig Light, nine miles to the south-west of Valentia.

Can you state the saving there would be of distance to a person going from Liverpool to Valentia, to embark for Dublin instead of embarking at once from Liverpool to sail the whole distance, and what would be the saving in the sea voyage?—The difference between travelling across Ireland, compared to coasting to the same parallel from Liverpool, would be about 100 miles; the difference of sea passage to Halifax from Liverpool or Valentia would be between 400 and 500 statute miles of the worst part of the whole navigation.

Having stated that the size of the vessel intended for the proposed passage was about 700 tons, for how many days steaming would she be capable of carrying fuel?—About thirty days.

What power were her engines to be?—Two, of 100-horse power each.

What quantity of coals should you think it necessary to carry?—Three hundred tons.

Upon what length of passage did you calculate

from Valentia to Halifax and back?—Fourteen days out and about eleven home.

From whence did you propose to obtain your supply of coals at Valentia?—Scotch coal could be deposited at Valentia on very reasonable terms, which is considered the best for steam, and coal could be still more cheaply provided at Halifax, from Sidney and Picton, in Nova Scotia, where there is excellent coal for that purpose.

Should you propose to touch at any intermediate place, for the purpose of taking in coal?—We conceive that with a view to lightening the vessel as much as possible on her passage, a depôt should be placed at St. John's, which can be approached with perfect safety during seven months of the year; and that for the winter months it would be desirable to touch at the Azores with the same object, of lightening the vessel.

In calculating the time that would be necessary for performing the voyage, have you reckoned for touching at those places?—Yes.

How much coal should you require upon the average to carry you to St. John's?—I should suppose about 200 tons, because in all cases of such importance, you would take sufficient fuel to steam with full power against constant adverse weather. Considerable saving would of course be made of fuel on the return passage, from the prevalence of westerly winds. In comparing the purpose of steaming,

either from Liverpool or Valentia, it was obvious that either the difference in the quantity of fuel would require a considerable enlargement of the vessel, or that they must necessarily stop at some southern or western point of Ireland for fuel, which would occasion a delay in their navigation.

What would be the length of the passage to St. John's?—Between eight and nine days out, and between seven and eight days home.

What are the grounds upon which you would fix upon the western coast of Ireland as a point of departure for the American mails, in preference to any port in the Channel?—The western harbour in question is, generally speaking, in a direct line from the principal commercial cities of England to Halifax or New York; therefore, a letter proceeding by mail in that direction, would be advancing on its proper line of destination; whereas, in order to depart from any Channel port, as Falmouth or Liverpool, a letter from any other town must, more or less, deviate from its proper line, and in many cases it must retrograde. For instance, a letter from Bristol or from London, or from Glasgow or from Belfast, is going greatly out of its line, if it is to embark at Liverpool. The case is more absurd, if letters are also to pass through London, by a greater deviation before they proceed to their point of departure; the consequence of which is, that his Majesty's mail despatched from Falmouth, has very little of the correspondence that passes between

England and America, excepting duplicate commercial letters ; but all the main correspondence is carried on by vessels sailing from Liverpool to New York, as before described. This correspondence nearly altogether escapes contribution towards the inland postage of this country ; and as by the combination of commerce and passage from Liverpool, the American vessels being of a very fine order and excellent sailers, command a decided preference over the Government packets. It will be impossible, whilst Falmouth continues to be the point of departure, ever to obtain to his Majesty's mails the benefit of conveying letters or passengers in competition with Liverpool ; but by selecting a point of departure which would necessarily command a more rapid communication than can possibly take place from Liverpool, the commercial interest of parties will induce them to give a preference to the King's mail ; and if that point of departure shall be at the western extremity of the kingdom, the longest line of internal postage will be generally obtained to the Post-office revenue. All other commercial towns are perfectly aware of the great advantage which Liverpool has over them, in monopolizing, as it were, the conveyance of commercial letters ; the earliest and the latest communications are by that means made to and from Liverpool, and the correspondence of other cities is comparatively later and more circuitous ; whereas, by an impartial selection of a more convenient point, the

correspondence with all the commercial towns in the kingdom would be carried on independently, on their proper lines of communication. For instance, a letter from Glasgow or from Belfast, or from Bristol or from London, would proceed on the shortest possible line that the nature of the case admits of from those towns towards Halifax or New York; and in the return of communication, commercial letters would be in each case distributed impartially by the most direct rout from the point of landing to those commercial cities. As far as American correspondence is concerned, the foreign Post-office of England may now be considered as situated in New York; and that the Post-office can never enter into competition with America, until they create a superior mode of communication, of which the commercial world will be glad to avail itself, and in which each town will have the benefit in proportion to its natural pretensions or position. As long as Liverpool is the point of departure, combining commerce with passage, the Liverpool and New York vessel will take away the correspondence from the Post-office, and no harbour within the Channel will ever successfully compete with Liverpool.

Have you ever considered the objection that might be suggested on account of the removal of the point of departure to a greater distance from the seat of government, with reference to political communications?—I have; but I do not conceive that any

inconvenience would arise when the regular days of departure of mails are already known, because Government may issue directions beforehand to delay the mail, should occasion require it, as is now done at Falmouth; besides, extra packets may be provided. Moreover, those sudden changes which may arise in political correspondence with foreign states, can seldom occur in the communications with the governors of our American colonies. I do not conceive that any such inconvenience could over-balance the other general advantages of such a point of departure.

Have any calculations been made with a view to show the distances of different routes that are taken between England and America, and the saving that will be produced by the communication you propose?—A very accurate calculation has been made of the comparative distances from different points, which I will leave with the Commissioners.

[*The same was delivered in.*]

By whom were these calculations made?—By Mr. Nimmo.

Captain *Francis Beaufort*, called in; and examined.

You are hydrographer to the Admiralty?—I am.

How long have you been in that situation?—A year.

Will you describe the general nature of the duties of hydrographer?—Preparing the charts for His Majesty's service.

You were previously in the naval service?—All my life.

In what parts of the world have you been?—There is scarcely any part of the world that I have not been in.

Have you had any experience in the navigation of steam-vessels?—None, more than occasionally having been passenger in them.

Have you ever directed your attention particularly to the comparative facilities of navigation offered by the principal ports of the United Kingdom as points of destination and departure for the packets?—My mind has been turned to that subject lately.

What would be the advantages with respect to embarkation for the west and south of Europe and America generally, by choosing a harbour on the west of Ireland, instead of one within the Channel?—The first object of vessels bound to the Mediterranean, or to the West Indies, on the supposition of an adverse wind, is to get far enough out of the Channel to be able to adopt either tack without fear of the land; for when it blows hard, no ship can work to windward without sufficient room to make long stretches, and to take advantage of the changes of winds and tides. The next object is, when once fairly out, to gain sufficient westing to fetch round Cape Finisterre. Now, by sailing from a port on the west coast of Ireland both these objects are secured; as with a south-west gale a vessel would at once stretch off to

the north-west, instead of struggling for days between Ushant and the Lizard, and with the wind at west she would be able to clear Cape Finisterre, while a vessel from Falmouth would be embayed and obliged to stand to the north-west to keep an offing. One disadvantage of Falmouth, as a port of embarkation, is the difficulty of sailing when the wind blows with violence from the southward. It appears that on an average of the last four years six packets per annum have been detained about 40 hours each. A packet harbour should, if possible, have two ways of exit, like Spithead, for instance.

Are there any circumstances respecting the coasts and currents, and the prevalent winds within the Channel, which increase in a still greater degree the advantages of preferring a western harbour?—In comparing the coasts of the two countries, Ireland seems to have this advantage, that a vessel once out of any of her western ports can weather the land, either on one tack or the other, as stated in my former answer. With respect to the currents, the advantages are not of great moment. The winds, however, are a feature of considerable importance in the comparison. It appears that taking the average of the last 10 years there were in each year 186 days of westerly winds and 101 days of easterly, and that the general mean wind for the whole period was S. 83° W., about one sixth of each year. Just then in the ratio of this prevalent wind, is the advantage of “preferring a

western harbour," besides that arising, as above-mentioned, from the conformation of the coast. I have drawn up a tabular statement of the above facts, extracted from the Meteorological Register of the Royal Society in London, and I endeavoured to form a similar table for Falmouth, from the Post-office Packet Lists, but as the Sundays and many other days were omitted in them, no satisfactory results could be obtained.

[*A Table showing the Daily Winds for each of the last Ten Years, compiled from the Meteorological Register of the Royal Society of London was handed in, a Copy of which is as follows:*]

YEAR.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm	Total of Easterly.	Total of Westerly
1820	57	21	54	27	39	47	87	33	1	102	168
1821	36	15	56	20	41	49	112	35	1	91	196
1822	42	24	59	18	39	46	111	24	2	101	181
1823	43	30	50	19	31	46	106	37	3	99	189
1824	50	19	53	9	38	30	127	38	2	81	195
1825	47	26	49	22	29	33	120	35	4	97	188
1826	27	49	35	45	21	106	26	55	1	129	187
1827	40	54	12	49	20	125	19	45	1	115	189
1828	36	29	28	47	31	132	20	40	3	104	192
1829	42	59	32	39	21	74	43	54	1	130	171
Mean of the 10 Years	42	33	43	29	31	69	77	39	2	101	186

Or, supposing a feather to have been abandoned to the wind at the beginning of each of these years, then

the mean direction in which it would have moved by the end of the year is stated in a Table, which I have also drawn up; and assuming the strength of the wind to have been equal throughout, the number of days which the feather would have advanced, is also given.

[*The Table was handed in, a Copy of which is as follows :*]

Year.	Direction.	Days.	Year.	Direction.	Days.
1820 - -	S. 86° E.	56	1825 - -	S. 75° E.	86
1821 - -	N. 89 E.	92	1826 - -	N. 58 E.	47
1822 - -	N. 84 E.	72	1827 - -	N. 58 E.	54
1823 - -	S. 81 E.	81	1828 - -	N. 39 E.	95
1824 - -	S. 74 E.	91	1829 - -	N. 57 E.	38

General mean for the 10 years, N. 83° E. 66 days per annum; in other words, the mean prevalent wind for the last 10 years was S. 83° W. $\frac{66}{365}$ of the year.

Are you aware of the grounds on which Falmouth contended against the project of the Admiralty, to change the packet station to Plymouth?—I am not; but they were probably of the same nature as those I have stated; for, although Falmouth is only 12 leagues to the westward of Plymouth, even that distance gives it an obvious superiority as a point of departure.

Are you in possession of any facts on which to

estimate the difference generally in sailing to the southward and westward from a more westerly harbour, compared to one within the Channel?—I have had a sheet of tracks, projected on a small scale from the log-books of 30 packets, which had to contend with foul winds in crossing the Bay: and supposing that other vessels had sailed from a port on the south-west coast of Ireland at the same time, and affected by the same weather, their comparative progress is shown by a similar series of tracks in red ink. The average result of these tracks gives about $4\frac{2}{3}$ days in favour of the Irish packets. But the celerity of the mail is not the only point of contrast; the saving of four or five days in the wear and tear of the vessels, and in the health and comfort of the passengers, are considerations of much weight.

Are you aware of cases of great mischief to the public service in the course of the last war, derived from embarkations within the Channel, compared to what would have been the effect from the west coast of Ireland?—This question leads to a subject of the highest importance, and I am sorry my time has been too much occupied to search for the proofs which the records of the last war would abundantly furnish of the disadvantages of embarking military supplies from ports in the Channel. The detention, however, of Rear-Admiral Christian is proverbially known: he sailed from Portsmouth with an expedition for the West Indies, on the 16th of November, 1779, and

after having been repeatedly blown back, he did not ultimately clear the Channel till the end of the following March. Every seaman must recollect innumerable instances of such detentions, and every soldier will recollect the havoc produced in the health and discipline of the troops when long cooped up in transports. It would well illustrate this question if returns could be had from the War Office of the time elapsed from the embarkation of the several reinforcements at Portsmouth and Plymouth during the Peninsula war to their arrival in Spain or Portugal, and accompanied by a statement of the winds, from which a comparison could be easily made of the period that would have been sufficient if embarked at a western Irish port. Should we be again engaged in active hostilities in those countries, or in the Mediterranean, the benefits from such an arrangement would be incalculable. Even the regular reliefs which sail during peace would feel its advantages. Recruits would gradually move across England and Ireland; their health and discipline would improve by escaping the large sea-ports, and their embarkation might immediately follow their arrival on the coast. This may be put also in another point of view: a large force would thus be kept in Ireland, gradually moving on the point of embarkation, readily detachable in any direction, and effectually occupying that country, without having the appearance of being a garrison.

Have you any data on which to calculate the difference of sailing in unfavourable winds between the parallels of Falmouth and the west coast of Ireland?—The statement in answer to the first and second questions, and the two sheets of tracks, seem to furnish complete data for that decision.

Can you furnish us with the professional opinion of the Navy, relative to the currents in the entrance of the Channel, described by Major Rennell?—A current sometimes setting to the north-west across the mouth of the Channel, after hard westerly gales, has, I believe been generally admitted to exist.

Are you particularly aware of his opinions on this subject?—I have often conversed with that eminent and lamented geographer on the subject of this current. The outline of his opinion may be stated in a few words: long-continued westerly winds in the Atlantic, force its waters along the north coast of Spain into the Bay of Biscay; the sea being thus raised above its natural level escapes in the easiest direction, and thus forms a current which strikes off to the north-west from Ushant just in the same way that the tropical trade winds piling up the water in the Gulf of Mexico, form the well-known Gulf Stream, which takes the direction of the adjacent shores, and the effects of which have been traced much beyond 2,000 miles. Major Rennell's papers on this subject were printed in the Philosophical Transactions for 1793 and 1815.

Do you consider that besides greater rapidity and certainty of passage, there would be in time of war greater security against an enemy's cruizers in the packets sailing from a western harbour of Ireland than from one in the Channel?—Whatever shortens the voyage of a packet must proportionally diminish the period of her exposure to the enemy's cruizers, and the further the packet station is removed from the enemy's ports, the less is the chance of his cruizer's venturing into its neighbourhood. The homeward-bound packet would find it very advantageous to make at once for the coast of Ireland, instead of entering the Channel at no very great distance from Brest. During the last war, French cruizers and privateers frequently lay in wait at night off the Lizard.

Are the winds of the Channel generally from some point of the east or west?—There always appears to be a tendency in the wind to accommodate itself to the general direction of the coast; even the low banks of the Thames draw the wind two or three points up or down the various reaches, and thus when the wind is due west in the offing, it will often be W. S. W. in the English Channel, and S. W. in St. George's Channel.

Would there be in unfavourable winds great benefit in the return packets, as well as their departure, by choosing a more westerly harbour?—The same reasoning will apply to the homeward packets as to

those outward bound. Their distance to run would be shortened. When struggling against opposite winds, they would have open sea-room; they would avoid the Bay in-draft, and all injurious effects of the north-west current, and on one tack or other they could fetch under the west coast of Ireland, and thus make it a weather shore, which in no case can be done with the coast of England during easterly gales. A collection of homeward-bound tracks similar to that already presented, will show the advantage of a western harbour; the average difference being upwards of five days in its favour.

What is the longitude of Falmouth?—Five degrees west.

What is the longitude of the west of Ireland?—Ten degrees west.

What would be the general effect of sailing from the latter compared to the former, under the prevalent winds of the Channel, in communication with the western harbours of Europe and the Mediterranean?—I conceive I have already answered that, in the answer which I gave to the fourth question.

Can you calculate what would be the average difference in sailing to and from our North American colonies, between Falmouth and the coast of Ireland?—From whatever “average difference of sailing” between Falmouth and a western port of Ireland may be ascribed to the considerations already stated, must be subtracted the difference arising from the positive

distance of 200 miles between the above places, and which may be taken at between one and two days.

What you have stated refers principally to sailing vessels?—Yes.

In what degree would that opinion be altered or affected by the vessels used being steamers?—It would not be altered in any very great degree, for though a steamer succeeds in getting to windward against the wind, yet it has a most powerful effect in checking her velocity when against her, and therefore my reasoning would still apply, though in a less proportion.

Are you acquainted with the harbour of Valentia?—I have been there, but I cannot say that I am intimately acquainted with the southern inlet. I understand a survey is preparing of it now.

That is the most western port, or one of the most western ports of the British islands, is it not?—It is the most western port of Europe.

And also of the British islands, is it not?—The most western port.

Does not this locally offer peculiar advantages for communication over sea with other parts of the world?—Upon the principle I have stated, I think it does, particularly so.

If Valentia would be a very advantageous harbour as a packet station, would it not be equally so in time of war for ships resorting to it?—Most undoubtedly.

Does not Valentia enjoy the advantage which you

attributed to Spithead, of being able to have a two-fold exit?—Certainly, in some degree.

Is there any difficulty to be apprehended to vessels leaving the port, on account of the expanse of ocean or rather the weight of water to which they are immediately opposed towards the west?—I should say certainly not.

Are you acquainted with the navigation of the Bristol Channel?—More from charts than practically.

Are you aware of the comparative advantages between Bristol and Milford?—I should say five to one in favour of Milford.

As a point of departure or of communication with the southern coast of Ireland, which should you prefer, Milford or Bristol?—Milford, certainly.

Are you speaking now with regard to steam-vessels;—Yes.

Will you state your reasons for that?—The strength of the tides, and the number of shoals in the higher parts of the Bristol Channel, would be a constant source of detention. In boats starting from Bristol and starting from Milford Haven, the advantage would be very considerable in favour of the latter.

Allowing the distance to be the same?—I allude to the facility of ingress and egress of the two ports, and independently of their relative distance to Dunmore Harbour, which is about seven to three.

What is your opinion as to the practicability of

crossing the ocean between the west of Ireland and America, by steam?—I have no hesitation in saying that it is not only practicable and feasible, but I am quite sure it will be generally introduced some day or other. We find that steam rather increases the buoyancy and the power of the vessels to resist rough weather in the Channel and North Sea, and I do not know why it should not answer the same purpose in the Atlantic.

EXPERIMENTAL IMPROVEMENTS

ON

CROWN LANDS,

AT

KING WILLIAM'S TOWN,

IRELAND.

MR. WEALE'S report describes the crown lands of Pobble O'Keefe, in the county of Cork, as situated in the very centre of an unopened district, (Vide Mr. Griffith's Report, 6th February, 1823,) comprehending 970 square miles, British,—only two resident landed proprietors in the whole district. Mr. Griffith describes, in a forcible manner, the want of roads—the then turbulent habits of the peasantry. The soil clayey, requiring draining and liming—beds of culm and thin seams of coal abounding, surrounded by lime-stone. The only pass then in existence had been made at the expense of government, after Earl Desmond's rebellion; whereas in

Report, April 1829, Mr. Griffith describes the change effected as wonderful. I give, in his own words, the agreeable statement.

“It now becomes my pleasing task to describe the improvements which have been effected since I first commenced laying out the new roads through this neglected district. The object of the Government was to open the country so as to render it generally accessible, and for this purpose the main lines of new roads were determined on: one to run nearly in a north and south direction, from the village of Newmarket in the county of Cork, to Listowel in the county of Kerry, a distance of 32 miles; a second, at right angles to the first, and nearly in an east and west direction, from Newcastle in the county of Limerick, by the small village of Abbeyfeale, to the town of Castle Island in the county of Kerry, a distance of 29 miles; and a third, also in an east and west direction, 20 miles to the south of the second, from Newmarket in the county of Cork, for a length of 14 miles towards Charleville in the same county, making a total of $75\frac{1}{2}$ miles of new road.

“The whole of these new roads have been completed, and are now open to the public.

“At the commencement of the works, the people flocked to them from all quarters, seeking employment at any rate which might be offered; their general appearance bespoke extreme poverty; their looks were

haggard, and their clothing wretched ; they rarely possessed any tools or implements of husbandry beyond a very small ill-made spade, and, as might be expected under such circumstances, nearly the whole face of the country was unimproved, and in a state of nature ; but since the completion of the roads, rapid strides have been made towards cultivation and improvement : upwards of 60 new lime-kilns have been built for the purpose of burning lime for agriculture within the last two years ; carts, ploughs and harrows of superior construction, and other agricultural implements, have become common ; new houses of a better class have been built, or are building in great numbers, in the vicinity of the new roads, and also in the villages of Newmarket, Castle Island, and Abbeyfeale ; new inclosures of mountain farms are being made in every direction ; and this country, which within the last seven years was the theatre of lawless outrage, and residence of what might be termed the rebel army, has become perfectly tranquil, and exhibits a scene of industry and exertion at once pleasing and remarkable.

“ To the credit of the inhabitants, I must say that a large portion of the money received by them for labour on the roads has been husbanded with care, and subsequently laid out in building substantial houses, and in the purchase of cattle and implements of husbandry ; and numerous examples might be adduced of poor labourers, possessing neither money,

houses, nor lands when first employed on the public roads, who within the last year have been able to take farms, build houses, and stock their lands with cows and young cattle.

“The advantage of the new roads has not been confined solely to the improvement of the interior of the district, the surrounding fertile country has also been materially benefited by the open, level and direct lines of communication through the unimproved country to the cities of Cork and Limerick, which are the great marts for all kinds of agricultural produce.

“Thus the new road from Newmarket to Listowel, will diminish the distance, by a good road between the latter place and the city of Cork, 36 statute miles; the difference between Listowel and Cork, by the present road through Tralee and Killarney, being 102 miles, while by the new road it is but 66 miles. In the same manner the distance, by a good road between Limerick and Killarney, will be diminished $29\frac{1}{2}$ miles, the present road by Tarbert and Listowel being 99 miles in length, while by the new road is but $69\frac{1}{2}$.”

“The improvements above described, which are attributable to the new roads, do not extend to the whole of the mountain district situated within the river Shannon and the river Blackwater. There remains a considerable portion, extending northward from the river Blackwater to a line drawn between

the towns of Castle Island and Newmarket, comprehending an area of about 200 square miles, or 128,000 acres, in which there is no road passable for horsemen during the winter months.

“As expressed in a former report, I have long contemplated the propriety of making a road through this neglected district, and of opening it to the markets of Cork and Mallow. It would complete the principal object for which I was sent down to the Southern District, namely, the forming new roads through those mountains, and rendering them accessible in every part.

“I am of opinion that the proposed road should commence at Castle Island, and proceed eastward through the mountains, and, passing through the collieries of Clonbanin, Dorminagh, Dromagh and Coolclough, join the new road now making to Cork through the Bogra mountains at Clonmeen bridge, over the river Blackwater.

“This road, if completed, would open a direct communication from Tralee and Castle Island to the city of Cork, which is the best market and would shorten the road between Tralee and Cork 14 statute miles, and between Castle Island and Cork 22 miles; the present distance from Tralee to Cork by Killarney being 76 statute miles, while the proposed road will be but 62.

“This road is of the utmost importance to the future improvement of the country. It would pass

through, or very close to the whole of the valuable coal and culm collieries of the Southern District, and afford an easy communication with the surrounding country, many parts of which are in the greatest want of fuel for domestic purposes, and for burning lime, the only manure there used for corn crops.

“This road would also produce a most beneficial effect on the agriculture of the country through which it passes. There are lime-stone quarries at both extremities, and the whole of the intervening country is covered by a stiff cold clay soil, which when manured by lime is susceptible of great improvement, and capable of producing excellent crops of oats, potatoes and flax. At present, from want of roads, no lime-stone can be drawn into the country, and consequently the land remains untilled, and the inhabitants are wretched, slothful, and discontented.”

The Crown estate is situated in the very centre of this unopened district, at about 10 miles distance from the town of Castle Island on the west, and from Newmarket and Kanturk on the east. It extends in length from north to south, parallel with the river Blackwater, by which it is in great part bounded on the west, about seven miles; and in breadth, from west to east, on which side it is bounded by the Awnaglyn or Anntharaghglyn, a mountain-stream flowing into the Blackwater near Ahane, about two miles and a quarter; comprising altogether more

than 9,000 statute acres of undulating hilly country, at an average elevation of about 500 feet above the level of the sea; and of which the soil varies from a strong clay to a loamy gravel and sand on the higher grounds, with tracts of alluvium and some peat bog in the vallies and along the bottoms. At present, however, the Crown is in the actual possession of only 5,000 acres; the remainder, contained within a longitudinal section of the estate next the Awnaglyn, being withheld by the adjacent proprietors, who claim to be entitled to the inheritance.

The lands which have been surrendered to the Crown are occupied by upwards of 70 native families, who reside in miserable mud cabins, the only buildings on the property, and who subsist almost entirely on the deteriorated produce of a few acres of a potatoe tillage; all their other earnings from the produce of a few cows and the grazing of cattle in the summer months, together with any money they can obtain for harvest-work in the adjacent districts, being barely sufficient to discharge the rents at which they hold their property. The net yearly amount of the rental is about 610*l.*; but however small that sum may appear to be, with reference to the extent of the property, and natural capabilities of the soil, it is certain that it is exclusively derived from the mere labour of the population seated on it, in persevering endeavours to improve the natural herbage of such small parcels of the land as are susceptible of cultivation without

artificial drainage, and without the aid of manures and implements of husbandry. With every local facility towards effecting a perfect drainage of the estate, the lands are saturated with water, and covered with thick matted beds of moss, rushes and heath, the growth of ages; and they are alike unprovided with buildings and fences for shelter, and without occupation roads from one division to another. The people are possessed of no other capital than their labour; for whatever stock belonging to them may be found on the lands at any period, would be insufficient to discharge the rent then due; and indeed, insulated as this and the adjacent estates now are from all practicable roads for the conveyance of agricultural produce, and of such matters as are essentially necessary to an improved cultivation of them, no capital could be profitably employed on them by the most skilful tenant. The greater and most valuable part of the estate is at present absolutely inaccessible by cars of any description; and the little lime which is expended on the grounds may truly be said to be carried thither by the poor occupants, at an expense almost equal to the additional produce from it, as the whole quantity of lime-stones which I have seen brought on the lands from a quarry not four miles distant, as the joint burthen of a horse, man, and boy, and as the product of their day's labour, could not have exceeded 200 weight.

With respect to "*the amount of money that may*

be required” for the proposed works, and to “*the probability of the results of the experiment affording a profitable return for the capital invested,*” it should be observed that the property is literally in a state of nature, that every thing necessary to adapt it for the purposes of husbandry, and for its cultivation, remains to be created or supplied; but, nevertheless, that it is, in its present condition, productive of a yearly revenue; and if the inheritance were put up to public sale, it would probably produce about 8,000*l.*

According to the survey and valuation made in 1821, and revised in 1828, the lands in possession may thus be classed :

	Contents in Statute Measure.			Estimated Yearly Rents.		
	A.	R.	P.	£.	s.	d.
Under partial cultivation, consisting of dispersed parcels of coarse heathy meadows, rushy bottom meadows, and coarse pasture lands, with some arable.....	1125	2	16	393	17	2
Mountain-pasture, entirely unreclaimed	3748	0	37	175	11	11
Heathy bog and turbary ..	103	1	30	6	5	3

From which it appears that not one-fourth part of the estate is at present capable of yielding a greater

gross yearly rent than 7*s.* per acre ; and that on an average of the whole of it, it is estimated to be worth only 2*s.* 4*d.* per acre ; although it is not charged with tithes, (except in respect of the few acres of potatoe tillage), nor with any public assessments, having hitherto been treated as a common waste*. Even this rental was returned by the surveyor as conditional on tenants being found with sufficient capital

* Subsequently to the date of this Report, however, and in pursuance of an Act of Parliament passed at the instance of the grand jury of the county of Cork, these and all other lands in the said county which had been previously held to be exempted, as waste and unprofitable, from contributing to the county funds, were valued and brought into charge ; and they have been included in the assessment books of grand jury presentments made at and since the summer assizes of 1831.

As soon as the Commissioners of Woods, &c. were informed of the demand made on the occupiers of the Crown lands for the sums apportioned on them, in respect of the first of these assessments, the Commissioners signified to the treasurer of the county, that although these Crown lands, being in the immediate possession of His Majesty and not in grant to any subject, were not legally chargeable with public assessments, the Board would nevertheless waive the benefit of that exemption, and undertake to contribute, as of the Bounty of the Crown, the amount of a fair apportionment, in respect of this property, of all public assessments.

And the Commissioners have accordingly since provided for the payment of such periodical assessments, and for the satisfaction of the claims of the ecclesiastical and lay tithe owners ; so that the people residing on the property are effectually secured against all processes for enforcing the payment of such charges ; a relief, which is essential to the proper management of landed property in Ireland.

March 1834.

J. W.

to stock the lands, which would be impracticable while they remain closed against the surrounding country.

On Wednesday last the labourers who had been employed on the works, for a distance of about six miles on either side of King William's Town, were paid there. On this occasion, the place exhibited the appearance of a small country fair. Two large booths, *containing Manchester goods*, were erected; several for cakes, and other eatables; and, I regret to say, five for the sale of spirits. In the evening there came a piper, and the assemblage was amused with a regular dance. As might be expected, there was some drunken men, but no quarrelling.

I have directed that in future *no stands for the sale of spirits shall be allowed*, and I shall take care at the next pay-day to enforce the order; but I should rather wish to encourage the sale of clothing and eatables.

In my last Report, laid before Parliament in the month of June 1831, I had the pleasure to describe the great improvement which had then taken place in the moral habits and industry of the inhabitants of the mountain country, which is mainly attributable to the opening of these new roads. In the year 1822, the district was the focus of disturbance and bloodshed; in 1831, it presented an example of peace and prosperity; and I have now the gratification to state that it still maintains the same character, and that

each year new inclosures are made and large tracts of hitherto unprofitable land are brought into a state of cultivation. Within the last year, the mail from Limerick to Tralee and Killarney has travelled the new road from Newcastle to Castle Island; and a day coach from Limerick has also been established on the same line, by means of which, passengers reach Killarney from Dublin in 23 hours.

Previously to the commencement of these roads, this portion of the district may be described as having been nearly inaccessible, particularly the part lying between Castle Island and the village of Boherbuy, and, consequently, the land was neglected and uncultivated, the people were ill-clothed, ill-fed and wretchedly housed. During the last summer, particularly in the months of July and August, 1,250 labourers and 118 horses were employed on the works; and during the year, a sum, amounting nearly to 9,000*l.* has been expended, the whole of which was paid to the *labourers actually employed*.

The expenditure of so large a sum of money, in a country in which no works had hitherto been undertaken, has already produced a striking effect; and several houses are now being erected, adjoining the new road, of a superior class to those hitherto occupied by the peasantry of the country; and I have no doubt that, on the completion of the roads, the progress in improvement and cultivation will be rapid, in proportion to the facility afforded. The introduction of

lime for manure is the great desideratum in the country. Long experience has proved its fertilizing effect on cold clay soils, when perfectly drained ; but hitherto, a very small quantity of calcareous manure has been used in this part of the country, as, owing to the want of roads, the only means of transport was in panniers on horses' backs, or, as I have frequently witnessed, on the backs of the women and children.

Principle on which the Works are conducted, and the People paid: by Richard Griffith.

In expending the public money, I use every exertion to ensure that the works shall be substantially executed, and at the same time, that the cost shall not exceed that which a contractor working for profit would pay for them ; in fact, I have determined to prove that 20s. of the public money shall go at least as far as the same amount of private money.

The system on which I endeavour to effect the object is, to admit of *no intermediate person between myself and my overseers and the actual workmen* ; and this rule holds good, whether masons, stonecutters, quarrymen, or common labourers are employed. At the same time, day labourers are never resorted to, excepting under very peculiar circumstances, the principle of the works being that all shall be performed by a system of small contracts.

On opening a new work, it is divided into a great number of lots, the execution of each of which is let,

by contract, to 10 or 12 labourers, the most intelligent of whom is selected as director, and is called the ganger. These contractors are paid at a certain rate per perch for fences, and so much per cubic yard for excavations in earth, rock, &c. Of course the prices vary, according to the nature of the excavation; and these prices are all regulated and set forth in a price-Book, which has been prepared by me, after much experience and consideration, and which comprehends every variety of work connected with road making.

The ganger regulates the men; is responsible for the implements, with which he is supplied from the public store; and keeps the account for his gang: for this duty, in addition to his own share as a workman he receives 1s. in the pound out of the sum earned. The works are all measured, and paid for once a month, and each individual employed is paid his share of the earnings; a rule which is never broken through, although sometimes the individual payments have amounted to upwards of 1,200*l.* at one pay. This system has now been pursued by me for upwards of 12 years, and I have found it work in a most satisfactory manner.

My overseers having no interest in defrauding the labourers, and as the whole of the works are paid for by a regulated system of prices, the industrious labourer will always earn in proportion to his exertions; and I invariably find, that though in the com-

mencement of a work the peasantry are desirous of being employed by the day, towards the conclusion they are all anxious for contract work.

Where persons who can read, write and keep accounts are found among the occupants of the land through which the road passes, the gangers are always selected from them; but when such cannot be found, they are selected from the neighbourhood, excepting in cases of difficulty, where great experience is required; in such instances, one of the old hands who has followed us from former works is employed as the ganger.

In selecting the site for the proposed village, and other improvements recommended in Mr. Weale's judicious Report, already alluded to, several difficulties presented themselves. It was important that the village should be on the line of the main road, in a sheltered situation, and where there was an abundance of water. Unfortunately, the only site combining those requisites was one adjoining the river Blackwater, where the surface was covered by a deep and very wet bog; but, knowing that the bog could be improved and rendered valuable by judicious treatment, I determined to adopt it, in preference to placing the village in a more elevated and exposed situation, where there was no constant supply of water, which latter I considered to be absolutely indispensable to the health and convenience of the inhabitants.

The flat bog on which the village has been commenced contains about 30 acres; its average depth is about 10 feet; and its surface was so wet when we commenced the road drains through it, that it was difficult and dangerous to walk upon. By great exertion during the last summer, the whole of this bog has been drained, and the surface of upwards of 20 acres has been formed and thrown up in ridges, to expose it to the action of the winter frosts: four acres have been covered, for a depth of four inches, with good earth, on three and a half acres of which a crop of potatoes was planted in the month of June last. This was very late; but, owing to the wetness of the season, the ground could not be prepared sooner. The crop was not good; but still it produced upwards of 10 tons of excellent potatoes, which will be found very useful in the months of April and May next, by enabling us, with the assistance of some oatmeal, to support strange labourers, who could not otherwise procure food in the mountains, owing to the general scantiness of the potatoe crop.*

This bog has also been surrounded by a plantation, as shown on the accompanying Map, which altogether contains $2\frac{1}{2}$ acres; and during the last summer the trees appeared healthy and made good shoots.

To facilitate the transport of earth from the adjoining valley of the river Blackwater, the only place

* At the rate of 2s. per hundred weight, which is the present market price in the country, the potatoes are worth 20*l.*

where a soil suitable for the improvement of the bog could be procured, a moveable wrought iron railroad was constructed. This railroad, which is 600 yards in length, is formed of bars of wrought iron, each 12 feet long by two inches deep, and half an inch in thickness. These bars are placed parallel to each other, at a distance of two feet six inches, and are supported by cast iron chairs or stands, firmly spiked down to wooden sleepers laid transversely under the iron bars, at a distance of three feet asunder. Waggon supplied with flanged iron wheels were constructed having tumbling boxes, which discharge at the side, each containing half a cubic yard. A waggon when filled was easily pushed on the railroad by one man, who performed 25 turns in a day; and in consequence of this facility, the carriage of clay from the river to the bog, a distance of 600 yards, cost less than 1*d.* per cubic yard; and the whole expense, including getting, filling and spreading, did not exceed 4½*d.* per cubic yard.

Had horses and carts been employed, in the usual manner, it would have been necessary, in the first instance, to form roads in the bog, on which horses could draw: this would have been a very expensive operation; and as heavy loads could not have been drawn, under such circumstances, the cost of the transport of the clay would have exceeded 5*d.* per cubic yard, so that, in this particular instance, the advantage gained by the railroad over the carriage

by horses was as five is to one. Owing to the facility of moving the railroad, its position was frequently changed during the progress of claying the bog, so that no additional wheeling was required, the whole of the clay having been spread from the heaps, as laid down by the railroad waggon.

On the completion of the claying of the four acres of bog, the railroad was formed into a line of communication between the site of the new village and the nearest stone quarry, distant 590 yards; and all the stone used in the four houses which have been erected during the last six months was transported on it; and by this means, a saving of 35*l.* has been made; and, of course, on all future buildings at the village a similar saving, in proportion, will be effected.

As will appear in the Appendix, the cost of the railroad, and four waggons amounted to 127*l.*; and already 68*l.* has been saved, namely, 35*l.* in carriage of stone, and 33*l.* 7*s.* in carriage of clay. During the present year the saving will be more than double that sum; and at the termination of the works the whole of the wrought iron may be used in the smith's forge; and the loss of weight, from wearing, will be very trifling.

As the period during which I can continue to direct the proposed improvements on the Crown lands must terminate on the completion of the Cork and Kerry new roads, or within three years from the present time, I am anxious to push forward these

interesting and valuable improvements. The eyes of the whole of the proprietors of mountain lands in the south of Ireland are anxiously watching our operations; and when it is recollected that the lands in question are situated in the midst of a district containing upwards of 400,000 acres of land in a state of nature, for the most part covered with shallow bog and heath, the whole of which is capable of great improvement, by fencing and draining, and a large proportion of it convertible into arable land, for the production of corn crops, the success of the experiment becomes a matter of great importance to the south of Ireland.

The only difficulty I anticipate as likely to retard the rapid progress of the proposed improvements, is the want of a sufficient number of labourers; for, notwithstanding the great outcry which is made respecting the poverty and destitution of our peasantry, from want of employment, I have found that our active operations are confined to about four months and a half in the year, namely, to the months of February and April in the spring, and between the 1st July and the 15th September in the summer. During the remaining part of the year, the peasantry find abundant occupation in agricultural employment, excepting, perhaps, in the month of January; and unless I were to raise the wages above the usual prices of the country, and thereby injure the farmer, I could not force on the works, excepting at those periods; and

this statement is not made from occurrences which have taken place during the last or preceding year, but from constant experience during the last twelve years in the counties of Cork, Kerry, Limerick, and Tipperary. Extraordinary, therefore, as, from preconceived notions, it may appear, the only apprehension I entertain of being able to cultivate and otherwise improve a large portion of the Crown lands, is the want of a sufficient number of labourers at the periods most required.

The peculiar feature of the present experiment I consider to be, the attempt to convert a numerous, unemployed, unskilful, and pauper population, into productive labourers on their native lands, and gradually to raise up from amongst them a body of tenants, who shall possess the ability and the means of permanently maintaining the agricultural improvements proposed to be executed, and concurrently with the desired and general amelioration in their own condition, be able to render, by the payment of increased rents, out of the profits of their cultivation of the soil, a full compensation for the costs of those improvements.

All who are well acquainted with the present state of Ireland need not to be informed that the best mode of accomplishing these objects is a problem, on the solution of which greatly depends the future tranquillity and prosperity of the country: and that from the nature of the proposition, many years may be

spent in a course of successful developement of it before it shall be proved to be resolved.

It startles an English ear to be told that there remain at this day, within the limits of the United Kingdom, in the cultivable mountains and wastes of Ireland, an immense and increasing population in a state of *villainage*, dependent on the will of their respective lords for the very means of existence, and who contribute nothing to the revenues of the State, either by direct taxation, or indirectly as consumers of commodities on which an impost has been levied ; whose condition differs in no substantial particular, as regards them personally, from that of the *villain* in early feudal times ; who are not permitted to appropriate to their own use any portion of the fruits of their labour, which is convertible into saleable produce at the nearest adjacent markets ; and multitudes of whom, to maintain a tenure of the mere means of existence, are yearly compelled to migrate to other districts, and there labour for the coin they are required to render to their mesne lords, as a compensation for those corporal services which the ancient *villain* was bound to render to his lord, but which would be of no available advantage to the modern landlord, whether he be the owner in fee, or that owner's lessee of the lands ; since, by their desertion from the country, and the security which the Government provides against a violent usurpation of their territories, they have neither demesnes to cultivate,

nor occasion to marshal vassals in their personal defence.

And yet, with reference to many extensive districts in Ireland, especially in the provinces of Connaught and Munster, and in some counties of Leinster, it will be found on careful investigation that this description is not overcharged. Even the partial ameliorations in the condition of the old native population which may now be traced in some of those districts, have all originated within the last 30 years, and are rather the results of an actual interposition of Government, than of any active exertions on the part of the proprietors of the soil. But, if the projection of public roads into those districts, and the measures taken to extend the protective power of the law for the security of life and property against arbitrary violation, have been productive of some beneficial effects, there can be no doubt that they have not materially mitigated the vassalage of the people, and that the great and concurrent increase in the population, without any substantial improvement in their general condition, tends to place the more civilized parts of the country in a state of great jeopardy ; and, therefore, any measures which may stimulate the proprietors of territory so circumstanced to exert themselves in raising the people from their present degradation, and which promises to demonstrate the means by which their own pecuniary interests may be at the same time promoted, must be admitted to be a measure well

deserving the attention of His Majesty's Government.

That the employment of middle men, as instruments for the accomplishment of these objects, is wholly ineffectual, long experience has sufficiently proved; and that the present pauper occupants of the land, either where a minute subdivision of any extensive property has obtained, or in districts remote from cities and towns, cannot be suddenly removed, and a new tenantry possessed of skill and capital substituted in their place, is a truth daily brought home to the conviction of proprietors. The allurements to voluntary emigration may prevail with many who are awakened to a full sense of the evils under which they suffer, and who are sustained by a natural spirit of enterprise to seek the remedy of them on the world's wide waste: but, looking at the character of the people, the misery of which countless generations of them have submitted, the fertility of their own soils, and, above all, the new lights which have broken in upon them, by the fierce collision of political parties, and the unlimited circulation of the productions of the periodical press, it is not less vain, than it would be impolitic, to rest on a hope that emigration will materially obviate the difficulties which now obstruct the progress of national improvement in Ireland.

I beg to observe that, to assure to the native population, and to the Crown as the proprietor of the

estate, the benefits arising from their employment at money wages, it is intended during the progress of the agricultural improvements, and until that population shall be permanently provided for, to limit the employment to the natives, and rigorously to prevent the settlement of any new labourers or tenants on the lands. The projected improvements will therefore occupy several years in the execution of them, and in their progress will require various qualifications in those to be employed, and will afford continual opportunities of preferring those among them who shall distinguish themselves by extraordinary skill or ability, or by other qualities entitling them to peculiar notice. The ordinary labourers' works in sinking drains, constructing occupation roads, and planting fences and woodland, will afford employment at all seasons of the year for those who would be occasionally otherwise unemployed; and as the agricultural operations proceed towards reclaiming and bringing into regular cultivation the allotments which shall be successively taken into the actual possession of the Crown for that purpose, the means will be afforded of constant employment and instruction in farming business to a certain number of the younger men and boys, who shall be selected from the various families, as promising to become, under such instruction, and by prudent conduct, skilful farmers and eligible tenants. From this class of farming labourers will be selected, under like dis-

crimination, the lessees of the new farms, as they shall be brought into a state fit for occupation.

Secondly, *it is intended to permit the several families in the occupation of the lands to continue to hold them at their present rents, until the new cultivation shall progressively extend to their respective divisions.*

The rental of the late Crown lessee has been somewhat reduced since the resumption of the property, by the Commissioners undertaking to discharge all public assessments on the lands, and the compositions payable to the ecclesiastical and lay tithe owners. The charge on the tenancy being so reduced, and the value of the occupation materially increased by the construction of the new public roads, I am assured by persons on whose local knowledge and judgment I can rely, and without reference to any other considerations affecting the ability of the tenants to meet the demand than would prevail if the lands were forthwith to be demised to them, that their respective holdings would afford them much more remunerative profit than they have ever hitherto enjoyed.

The regular payment of that rental will therefore be henceforth strictly enforced; subject only to such abatements from time to time as shall be proportional to the rent estimated to be charged on the parcels which shall be resumed for the purpose of improvement. But as the general drainage of the lands shall proceed, I would propose that an unlimited supply of lime-stone should be afforded, at the expense of

the Crown, to the tenant of each division, upon condition that he shall convert it into lime, to be expended on the land. However injudicious may be his application of this manure, he will derive ample compensation from the use of it, for his labour in raising turf and burning the stone; and thus far the liberality of the Commissioners may be beneficially indulged. But I would again *earnestly enforce the expediency of cautiously avoiding to afford him the slightest encouragement to waste his money or his labour on any fictitious improvements in buildings, or other matters of distant advantage to his tenure*; and advise that no one individual shall be permanently settled on an improved allotment of which a single acre shall have been previously in his particular occupation.

I am well aware that fully to effect this transplantation without excitement of dangerous feelings, of general discontent with the arrangements, and perhaps of ill blood among some of the people, will require much cautious management, much conciliatory forbearance, and great patience under constantly recurring trials of disappointment, on the part of those who shall be employed in the conduct of it. After some experience of such practical details, however, I am satisfied that, even with the most refractory and perverse, an early and unreserved explanation, a free communication and a strict adherence to fair dealing with the parties during the progress of their develop-

ment, and a steady unswerving perseverance in carrying them into effect, will not fail to overcome all the obstructions which the ignorance or the jealousies of the people may produce.

The gradual acquisition of property by them, which will certainly result from the constant employment afforded for their labour, and from a full payment of the remuneration *in money*, without any concurrent new demand for rent, cesses or tithes, will soon be found a powerful stimulus to the exertion of their industry and general good conduct; and as they are allowed to feel and securely to enjoy the partial benefits arising from the measures taken for the improvement of their condition, they will become reconciled to the incidental disturbance of their long engrafted habits, and place confidence in the obvious tendency of the changes to which they may be called upon to submit. There is no deficiency of natural intelligence among them, though it may be sometimes found difficult, from their imperfect acquaintance with the English language, and from their ignorance of other matters, to convey fully to their apprehension the meaning of the propositions addressed to them, and to comprehend the objections, the wishes, or the fears they desire to express. Even this impediment is rapidly yielding to the instruction which springs from an extended intercourse with strangers; and perhaps, as far as merely scholastic education can usefully aid in the development of the faculties of a rural

population, the peasantry of the south-western counties of Ireland are more advanced than the same class in any county of England. In fact, on these Crown lands, notwithstanding their remote insulation from all established schools, there are few adults who cannot write, read English, and use the common rules of arithmetic; and there are some among them who may fairly assert higher pretensions to reputed scholarship. At the same time, it may truly be said of them that they are not only unstained by the crimes which agitate the inhabitants of other districts more favourably circumstanced in most other respects, but they are also distinguishable for an observance of their religious and moral duties, for the general kindness of their disposition, and by a deeply implanted affection for their kindred; of all which virtues, I have myself witnessed among them some striking manifestations. There is nothing in the natural or moral character of the people which should therefore discourage the efforts of a beneficent Government to improve their civil condition; and I confidently trust it will not experience in this instance a disappointment of any of its expectations, either by the mismanagement of its agents or by the waywardness of the objects of its benevolence; and that it will receive the hearty cooperation of all who can promote the realization of them by their local influence, or by any accommodations they can render to the Commissioners.

Letter from Mr. Griffith, on the subject of reclaiming the Flat Bogs of Ireland ; annexed to Mr. Weale's Report.

Dear Sir,

Dublin, 22d February, 1834.

I QUITE agree with you in thinking that no general conclusion respecting the great question of the reclamation and cultivation of the flat bogs of Ireland can be drawn from the improvements now in progress on the Crown estate in the county of Cork.

It is true that, owing to the necessity of the case, I have undertaken the draining, claying and cultivation of a small bog on the estate adjoining King William's Town ; but the bog was very favourably circumstanced, close to the valley of the river Blackwater, where a soil of suitable quality could easily be procured for claying its surface ; and had it not actually surrounded the intended village, I should never have advised the expenditure of so much money on the improvement of a bog where the greater part of the estate, which is not bog, is capable of equal improvement, at a much cheaper rate ; but the experiment is interesting, as far as it goes ; and I shall take care to keep the accounts of the expenditure and return of produce from the bog separated from the other improvements, so that, when the whole is completed, we shall be enabled to see the matter in its true light.

In respect to the improvement of the flat bogs in Ireland, there are several important experiments now

in progress, which will tend to throw light on the subject.

In the neighbourhood of Killucan, in the county of Westmeath, Mr. Fetherston is now improving a large tract of bog, apparently with great success. He has imported wrought-iron rails, railroad waggons, and all the variety of draining tools that have been used at Chatmoss, near Manchester, which moss is exactly similar to our flat bogs. Mr. Murphy is also making improvements on a portion of the great bog of Allen, in the county of Kildare. Both these gentlemen have followed the system of draining adopted at Chatmoss. They plough the surface by horses, having square wooden pattens attached to their hoofs; and afterwards, by means of the railroad and waggons, cover the bog to the depth of four inches with clayey lime-stone gravel. In these experiments great attention is paid to arrangement and economy; and I expect, in the course of a year or two, we shall be enabled to determine with certainty as to the advantage of speculating largely in the reclamation of bogs in this country.

I am, dear Sir,

Very faithfully yours,

(Signed) RICHARD GRIFFITH.

James Weale, Esq.

&c. &c. &c.

To Thomas Bermingham, Esq.

MY DEAR SIR,

I have great pleasure in complying with your request to state my opinion on the subject of reclaiming the bogs of Ireland, because it is a matter in which I have felt a deep interest for some years past, and have accustomed myself to look at it not only as a question of policy and philanthropy, but also to try its practicability by the standard of pounds, shillings and pence. Through whichever medium I view the question, it appears to me that the adoption of an extensive improvement of those vast tracts of unproductive surface, which like so many foul blotches disfigure the fair face of the Green Isle, would be a measure fraught with the greatest possible good, and if the mode of improvement were well selected, and industriously prosecuted, the result would be as certain as it is desirable; I may perhaps be allowed to speak thus decidedly on the subject, because experience has made me practically acquainted with it both in England and Ireland on several of the "mosses" of Lancashire which I need not tell you are precisely similar to the "Red Bogs" of Ireland, I have had the pleasure of turning "the desert into a smiling plain," and have caused "the wilderness to blossom like the rose." It is now nearly seven years since a limited capital was applied under my direction to the reclamation of Chatmoss, several

hundreds of acres of which are now producing crops, both in quantity and quality equal to those grown on most of the land in the county. It was while engaged in these improvements that I first visited Ireland, and was induced to repeat that visit, in consequence of an invitation I received from Mr. Fetherston, of Griffin's-town, Westmeath. This gentleman being a resident land owner, as well as a practical agriculturist, having seen what had been done at Chatmoss, requested my assistance in commencing the reclamation of the bogs. It was with great pleasure I availed myself of this opportunity, and it would have afforded me still greater satisfaction, had the other calls upon my time not prevented me from reporting to you from *my own inspection*, the degree of improvement which has been effected. In the month of November last, however, I met Mr. Fetherston, who expressed himself highly pleased with his improvements, not only as a matter of pleasure but also of profit. That gentleman assured me that he had fed 400 sheep last year on his bog, that two years ago would not have fed a goose; and that he would not have exchanged his improved bog acres, for acres with much of the upland that surrounds it. At the time these improvements were commenced, my hopes ran very high that it would lead to the adoption of the plan on a very extensive scale; hopes which either from the political state of the country or the pecuniary difficulties of the landed proprietary,

have not been realized, for with the exception of some preparatory operations on the estate of Mr. Murphy, at Lullymoor, nothing whatever has been done, until a few months back, when by your recommendation my Lord Clonbrock commenced his improvements at Critt Bog.

For a detail of the modes of operation, I must refer you to the Liverpool Agricultural Society's Prize Essay, on the drainage and improvement of waste land, and which is inserted both in the British and Irish Farmers' Magazine.

The principle of improvement is simply this, to drain the bog by a process, both infallible and cheap, its cost not exceeding 40s. per acre; this being done a quantity of earth must be taken on to the surface, and mixed with the vegetable matter of which the bog is composed. In England the particular description of earth used, is a clay marl, but in Ireland the lime-stone gravel which is found in unlimited quantity on the verge of the bogs, furnishes a very superior material, inasmuch as the combination would comprise the *elements of the finest possible soil*. To effect this last operation with economy, moveable rail roads should be used; the purchase of these, and the outlay for labour requires capital, but I will venture to say that there are few modes if any of employing capital which would produce such an amount of both public and private good.

Wishing you all possible success in your efforts to
improve the condition of Ireland and the Irish,

I remain,

My dear Sir,

Yours faithfully,

W. REED.

Salford, near Manchester,

Jan. 28th. 1835.

FACTS AND ILLUSTRATIONS

FOR THE

Labourer's Friend Society.

THE

LABOURER MAKES THE VALUE OF THE LAND ;

OR,

The Use of an Irishman to his Country :

SHOWING HOW TO IMPROVE AN ESTATE BY WHAT IS FALSELY CALLED
"REDUNDANT LABOUR," BOTH IN ENGLAND AND IRELAND ;

IN A

SHORT NARRATIVE

OF THE

Home Colonies

OF

CASTLE-SAMPSON AND ISKERBANE,

ESTABLISHED FOR

THE RT. HON. LORD CLONBROCK,

Upon his Estates in the County of Roscommon, in Ireland.

BY THOMAS BERMINGHAM, Esq.,

OF CARAMANA KILCONNELL, COUNTY OF GALWAY.

With an Explanatory Map.

IT was, formerly, the custom in many parts of Ireland, to let land in the neighbourhood of a bog to the poor people who congregated there for the advantage of fuel and water. Their houses, or cabins, were built of the rudest materials, and without attention to comfort, cleanliness, or ventilation. At first, perhaps, one family rented a large tract of land; but in process of time, as a son or daughter married, an out-house or cow-cabin became the residence of the new married couple, and a portion of ground was assigned to them. Thus the holdings (or small tenements) became subdivided, not with permanent fences, so as to ensure to each person his own plot; but according to the variable regulations made by the heads of the village. The tillage-land of one person this year, being allotted to another next year, whilst the grazing-land was regulated by so many head of cattle to each portion, called collips: such subdivisions have been carried on, till the claims of some of the family have been a fortieth or fiftieth part of the whole.

As might be expected, the squabbles about property in these villages were incessant: appeals were made to the next sessions, where the greatest ingenuity and knowledge of law has been displayed by the villagers; succeeded by deadly feuds and bloody strife upon the return of the parties home. The head man of the village was expected to pay the rent

of the entire holdings, being by law responsible. This system, called the *Village system*, was continued longer in the West than in any other part of Ireland, and still exists there, although it has been partly broken in upon, and a better system introduced. The village of Iskerbane was thus circumstanced.

At the termination of one of those leases for three lives, (generally children named by the tenants) formerly so common in Ireland, the possession of the lands in question returned to Lord Clonbrock. This occurred about 1824 or 1825: the land comprising about 300 acres, old Irish measure, equal to 486 acres of English or statute measure, had been held for a long period, at an annual rent of £55. 7s. 8d. From being divided at first into four portions, it had become subdivided among 62 families, consisting of about 370 individuals, and the rent of the whole, paid up to about the year 1823, was £126. British per annum. At this time, it was deemed advisable to resort to some plan for reducing the number of occupiers upon this part of the estate; and it was determined to drain and improve the land. For the latter purpose, the drains marked *a. b. d.* and *b. c.* on the map were made; and a bank of gravel, cut away at the point *d.* to give a complete fall to the whole district. The land was then throw into the divisions intended, cross drains were made by the tenants, to separate their lots, the part which had formerly been bog was brought into cultivation, and the whole tract

assumed a new appearance. A road from E to F was made to communicate from the main road C. E. with the new allotments.

A selection of 27 families, the most responsible and best conducted in the village, was then made. These were declared tenants according to the new division of the land: the whole amount of the rent to be paid by them, being fixed at £183. 13s. 10*d.* The next step was to remove the 30 families considered as superabundant: offers of money were made to them, in addition to the last year's crop, free, provided they would consent to go away entirely, but they would not be persuaded to agree to this, although Mr. Wilmot Horton's plans for emigration, were fully submitted to them. In this dilemma, every anxiety being felt to treat these poor people with kindness, it was proposed to take back from a tenant upon a distant part of the estate, some hilly heathy ground, upon which sheep had been fed: this place, called Castle-Sampson, had the advantage of a very large bog, marked G. on the map. Many of the people were employed, and paid wages for building good substantial houses of lime and stone, at the proposed new colony, upon the situations marked on the map of Castle-Sampson; the 30 families were then invited to become tenants there, rent free for the first year: they were, moreover, allowed the last year's crop which they had raised at Iskerbane; and permitted to burn the sur-

face of the garden-ground in the rear of their new abodes. The sums paid to them for labour, in building these houses, enabled them by degrees to purchase stock, &c. ; so that they were ready to take more land in 1831, and now they are in quiet possession of that part of the estate of Castle-Sampson, from Nos. 28 to 63 inclusive, as appears on the map : having stocked it with 40 cows, 29 sheep, 3 horses, and 30 pigs ; and having, besides, the entire of this year's crop of potatoes, corn, &c. &c. They have also been employed in making a deep drain, marked I, through the bog, with a two-fold view—that of letting off the winter floods from the land marked 5 and 61,—and that of draining the vast bog. By a little skill in engineering, this drain may be made to form a canal, so that by means of a small boat, turf may be brought near the cottage-doors ; the bog for manure to the yards, where it may be used to form a compost for the hills ; and gravel and clay may be carried back to the bog : the land abounding in a kind of lime-stone gravel ; the very best manure for the bog, in the reclaiming of which plenty of employment may be found for young and old. If, at any time, it shall be found that there are too many people on this land, a removal of some part of the occupiers may be again arranged, and some of the houses now used as dwellings, can be converted into barns and stables for the tenants remaining stationary.

That part of Castle-Sampson Farm already alluded to, was let in the year 1824 to a single tenant, at the nominal rent of 179*l.* 2*s.* 3*d.*: after a considerable loss and expensive ejection, it was again let; then again taken back at another severe loss; and at last it was taken by a solvent farmer, at the rent of 156*l.* 16*s.* 4*d.* From him it was taken up for the purpose herebefore stated.

The rents of the estates of Iskerbane and Castle-Sampson are either regularly paid in cash, or have been charged to the tenants of both places, and paid by the labour on the works since their occupancy. There is little or no arrear: the sums lost by those occupiers who were unable to pay before leaving Iskerbane, and the loss of rent upon Castle-Sampson Farm, while the houses were building, have been set down as items in the expenses: it will, therefore, appear that the account has been made up to the full extent of the landlord's loss, *even supposing* the rents then charged would have been paid up, had the measures adopted *not* been pursued, which is by no means probable. The tenants of Iskerbane are now employed (upon their own account) in building excellent houses of lime and stone, the landlord supplying timbers, (from the thinning of plantations in the demesne of Clonbrock,) and metal window sashes and frames.

	£.	s.	d.
The present amount of annual rent on that part of Castle-Sampson, from No. 28 to 63, inclusive, is	173	5	8
The same of Iskerbane.....	183	15	10
	<hr/>		
Total	£357	1	6
	<hr/>		

The rent which was promised just before the new arrangement, by Iskerbane tenants	126	0	0
That part of Castle-Sampson	156	16	4
	<hr/>		
Total.....	£282	16	4
	<hr/>		

Increased rent, now payable annually £74 5 2

Total outlay at Iskerbane	206	11	5
Ditto at Castle-Sampson	1005	5	5
	<hr/>		
	£1211	16	10
	<hr/>		

Leaving fully 6 per cent. profit, for money expended.

And, may it not be presumed that the industry of these people, in cultivating and improving the bog at Castle-Sampson, will still further advance the rent of the estate? besides which, the quiet of the country has been secured, which had been for some time fearfully disturbed.

There are extensive tracts of mountain land and bog, in Ireland, which would afford protection and employment to the surplus population of other parts of the country. The peasantry only require direction

and assistance of the same kind which has been afforded upon Lord Clonbrock's estate, to become, elsewhere also, productive and useful members of society, instead of being (as too often is the case) under a mistaken system of management, forced to become a burthen to their landlords, and disturbers of the public peace.

	<i>£.</i>	<i>s.</i>	<i>d.</i>
Building and finishing off 30 houses, 34 feet long, 14 feet broad, and 8 feet high, containing a kitchen and 3 rooms— 25 <i>l.</i> 16 <i>s.</i> per house	774	18	0
Rent allowed to the farmer who held the land, upon his giving up possession of it when the building of the houses commenced.....	95	7	3
Making a large canal and drain (see map) ..	135	10	2
	£1005 5 5		

ISKERBANE OUTLAY.

Making the large drain A and B, a distance of two English miles, along the bottoms and cutaway bog, and many cross drains (see map)	113	16	0
Allowance to 5 tenants, upon removing from Iskerbane, and also those who were changed to Castle-Sampson	25	0	0
A wall along the Iskerbane road, in lieu of part of this arrear, built by the tenants ..	67	15	5
	£206 11 5		

SUMMARY OF THE FOREGOING
STATEMENTS.

	£.	s.	d.
Iskerbane produced during the old lease annually	55	7	8
When leased to one tenant, who afterwards re-let to numerous poor.			
It was afterwards let in 1824, at	110	15	4
In 1827	126	0	0
In May, 1830, when the 30 families were induced to leave it altogether, and the drains were made, it was re-let to the 27 families remaining, at	183	15	10
The expenditure on this part was, as before stated	206	11	5

An annual increased rent from the outlay and removal was, from 1824, £73 annually; and, as compared with 1827, £57 annual profit.

In 1824, when the old lease expired, the property of all the then occupiers, consisted of 8 horses and 30 cows, belonging to 62 families; whereas the present 27 families have 16 horses, 35 cows, with some heifers: every man has a pig, one-half of them have two, and some three pigs each. They are now building 15 new houses at their own expense, (except the timber and windows); length 34 feet by 14 wide, 9 feet high, three windows in front, and one

in the rear, containing two rooms, besides parlour and kitchen; the townland containing 300 acres, old Irish measure, of upland, bottoms, and cutaway bog: on which about 162 individuals now reside.

STATEMENT OF CASTLE-SAMPSON.

	£.	s.	d.
The land was let in 1820, at	179	2	3
After being taken up from a tenant, considerably in arrear.			
Loss by tenants in 1827	200	0	0
Let to one solvent tenant	156	16	6
The land now let to 30 tenants, at	173	5	8

The property of these tenants, who were considered *pauper* tenants, when brought up here—3 horses, 5 asses, 40 cows, and 29 sheep.

It will be perceived that the old rents were never paid up fairly. It is also plain that the great increase of rent has been from the place the people left, so that all the outlay upon improvements upon Castle-Sampson lands, is yet to produce its profit, and it is most probable the landlord will have much more than 6 per cent. upon his outlay, as he gains thus much at present, without making any charge to the Castle-Sampson people for the expenditure on their houses, &c. &c. &c. The increase of 16*l.* 9*s.* 4*d.* on this

part, being merely the rent of additional land, redeemed and chargeable from the drains that were made.

23, *Dover Street,*

Jan. 21, 1833.

REFERENCE TO ISKERBANE.

	<i>Arab. & Past.</i>		<i>Bot. ground.</i>		<i>Total Irish.</i>		<i>Total Engl.</i>	
	<i>A.</i>	<i>R. P.</i>	<i>A.</i>	<i>R. P.</i>	<i>A.</i>	<i>R. P.</i>	<i>A.</i>	<i>R. P.</i>
1 School House.....	0	0 24			0	0 24	0	0 39
2 John Doorly.....	0	0 36						
3 ditto.....			1	0 0	1	0 36	1	3 37
4 Dominick Kean.....	0	1 20						
5 ditto.....	0	2 34						
6 ditto.....			1	0 0	2	0 14	3	1 20
7 Fardy Kelly.....	0	0 20						
8 ditto.....			1	2 30	1	3 10	2	3 29
9 H. Har rog.....	0	0 4						
10 ditto.....			1	0 0	1	0 4	1	2 26
11 William Kelly.....	8	1 26						
12 ditto.....			4	0 30				
13 ditto.....	1	0 21						
14 ditto.....			2	2 22	16	1 19	26	2 2
15 John Hamrog.....	8	1 23						
16 ditto.....			4	0 30				
17 ditto.....			0	2 0				
18 ditto.....	1	0 21						
19 ditto.....			2	2 22	16	3 19	27	1 12
20 John Kelly.....	8	1 26						
21 ditto.....			5	0 0				
22 ditto.....	1	0 21						
23 ditto.....			2	2 22	17	0 29	27	3 13
24 Bryan Kelly.....	8	1 26						
25 ditto.....			5	0 0				
26 ditto.....	1	0 21						
27 ditto.....			2	2 22	17	0 29	27	3 13
28 Thomas Kelly.....	1	1 20						
29 ditto.....	6	2 20						
30 ditto.....			5	3 0				
31 ditto.....	1	0 21						
32 ditto.....			2	2 28	17	2 9	28	1 30
33 Bryan Fallon.....	1	1 20						
34 ditto.....	5	2 20						
35 ditto.....			4	2 30				
36 ditto.....	1	0 21						
37 ditto.....			2	2 28	15	1 39	25	0 15
38 John Kenny.....	1	1 27						
39 ditto.....	2	2 20						
40 ditto.....			4	2 30				
41 ditto.....	1	0 21						
42 ditto.....			2	2 28	12	2 6	20	1 9
43 Daniel Dolan.....	1	1 34						
44 ditto.....	2	2 20						
45 ditto.....			4	2 30				
46 ditto.....	1	0 21						
47 ditto.....			2	2 28	12	2 13	20	1 20
48 Lucky Fowler.....	1	2 0						
49 ditto.....	2	2 20						
50 ditto.....			4	2 30				
51 ditto.....	1	0 21						
52 ditto.....			2	1 20	12	1 11	19	3 33
<i>Carried forward</i>	72	2 32	71	2 30	144	1 22	233	3 18

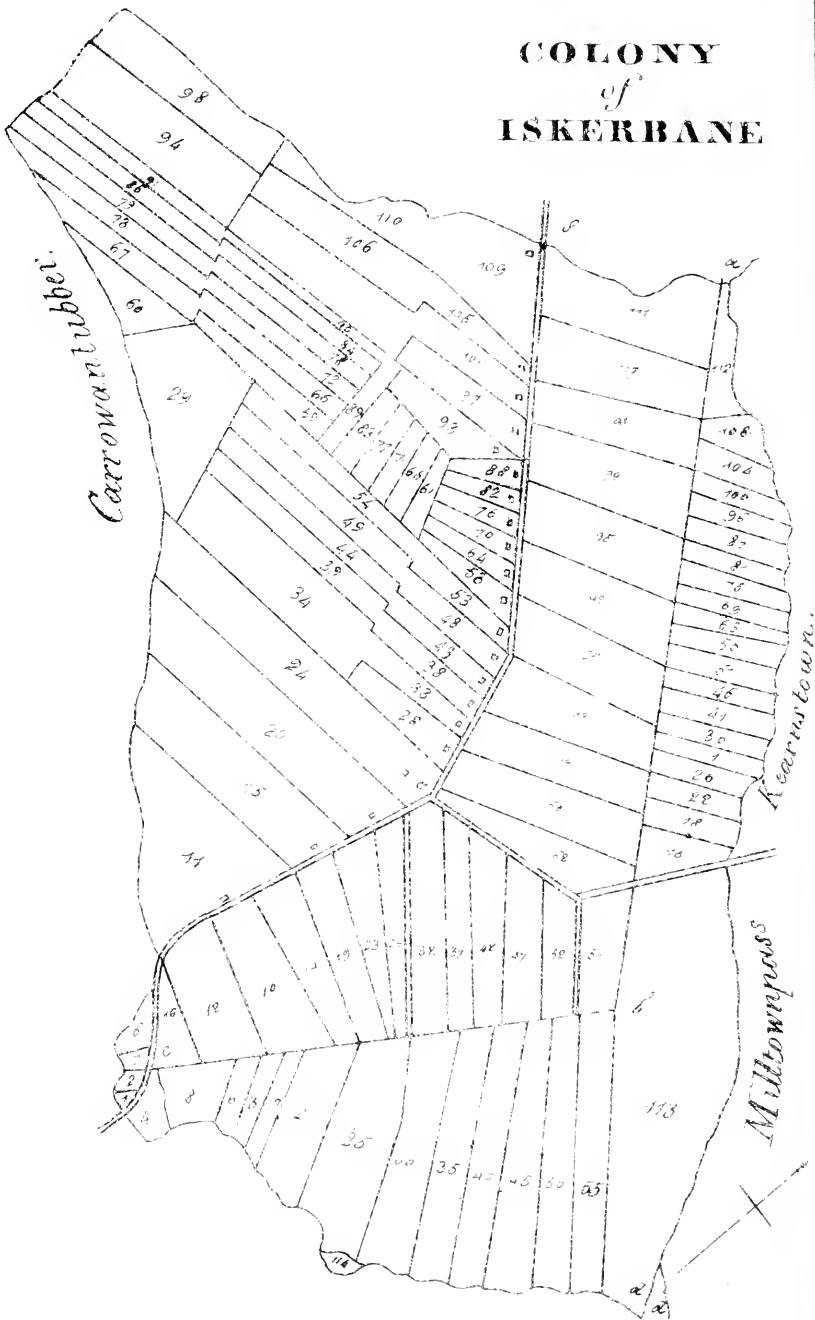
	<i>Arab. & past.</i>		<i>Bot. &c.</i>		<i>Total Irish.</i>		<i>Total Engl.</i>	
	<i>A.</i>	<i>R. P.</i>	<i>A.</i>	<i>R. P.</i>	<i>A.</i>	<i>R. P.</i>	<i>A.</i>	<i>R. P.</i>
Brought forward.....	72	2 32	71	2 30	144	1 22	233	3 18
53 & 54 Bryan Cunningham	4	0 20						
55 ditto			4	2 30				
56 ditto	1	0 21						
57 ditto			2	1 20	12	1 11	19	3 33
58 Francis Kelly.....	0	3 24						
59 ditto	1	2 20						
60 ditto	2	0 0						
61 ditto	1	0 0						
62 ditto			4	0 18				
63 ditto	1	0 21			10	3 3	17	1 31
64 Thomas Degnan	0	3 15						
65 ditto	1	0 0						
66 & 67 ditto.....	3	2 20						
68 ditto			4	0 18				
69 ditto	1	0 21			10	2 34	17	1 17
70 Luke Degnan.....	0	3 15						
71 ditto	1	0 0						
72 ditto	1	2 20						
73 ditto	2	0 0						
74 ditto			4	0 18				
75 ditto	1	0 21			10	2 34	17	1 17
76 Thomas Donnellon.....	0	3 0						
77 ditto	1	0 0						
78 & 79 ditto	3	2 20						
80 ditto			4	0 18				
81 ditto	1	0 21			10	2 19	17	0 33
82 Bartle Glennon.....	0	3 20						
83 ditto	1	0 0						
84 & 85 ditto.....	3	2 20						
86 ditto			3	3 0				
87 ditto	1	0 21			10	1 21	16	3 11
88 John Fallon	0	3 0						
89, 90, & 91 ditto	4	2 20						
92 ditto			4	0 18	9	1 38	15	1 18
93 Dominick Corty	1	2 28						
94 ditto	6	0 0						
95 ditto			5	1 10				
96 ditto	1	0 21			14	0 19	22	3 19
97 William M'Gurry	2	0 4						
98 ditto	4	0 0						
99 ditto			4	2 0				
100 ditto	1	0 21			11	2 25	18	3 21
101 & 102 Bryan Dolan	6	0 4						
103 ditto			4	2 0				
104 ditto	1	0 21			11	2 25	18	3 21
105 & 106 Pat Dolan.....	5	3 8						
107 ditto			4	2 0				
108 ditto	1	0 21			11	1 29	18	2 2
109 & 110 John Kelly	4	3 4						
111 ditto			5	2 0				
112 ditto	1	0 21			11	1 25	18	1 36
113 Mr. King			18	2 0	18	2 0	29	3 35
114 Island disputed			0	1 4	0	1 4	0	1 31
Waste	152	0 35	1	2 36	1	2 36	2	3 7
	152	0 35	147	3 20	300	0 25	486	0 30

* * * *Thirty-two Irish Plantation Perches to an Inch.*

REFERENCE TO CASTLE-SAMPSON.

	<i>Arab. & past.</i>		<i>Bot. &c.</i>		<i>Total Irish.</i>		<i>Total Engl.</i>	
	<i>A.</i>	<i>R. P.</i>	<i>A.</i>	<i>R. P.</i>	<i>A.</i>	<i>R. P.</i>	<i>A.</i>	<i>R. P.</i>
1 Pat Naughton	63	1 20	6	0 0	69	1 20	112	1 20
2 Denis Downy	12	2 20			12	2 20	20	1 32
3 William Downy	4	3 20			4	3 20	7	3 24
4 Bryan Downy	11	2 0						
5 ditto			10	1 36	21	3 36	35	2 15
6 William Downy	10	1 0	5	3 36				
7 ditto			2	3 27	19	0 23	31	0 0
8 John Downy	10	1 12	5	2 4				
9 ditto			2	3 27	18	3 3	30	1 24
10 Patrick Spelman	4	0 30	0	2 5	4	2 35	7	2 23
11 John Killen and R. Keogh	9	3 4	1	1 32	11	0 36	18	0 29
12 M'Naughton	4	3 14	1	2 4	6	1 18	10	1 9
13 Darcy's Island	2	1 11			2	1 11	3	3 0
14 Brooke and Co.....	23	2 22						
15 ditto			1	1 4				
16 ditto			3	0 14	34	2 0	55	3 22
17 Charles Brooke.....	9	3 16						
18 ditto			7	0 26				
19 ditto			2	1 8	19	1 10	31	1 5
20 Michael Brooke	4	2 17	2	0 0				
21 ditto			2	1 8	8	3 25	14	1 26
22 Michael Hughes	3	2 17	3	0 0				
23 ditto			2	1 8	8	3 25	14	1 26
24 Edward Spelman.....	20	2 38	8	1 39	29	0 37	47	1 15
25 Patrick Spelman	0	3 9	1	1 9				
26 ditto	1	2 6	1	0 36	4	3 20	7	3 23
27 Edward Crean	6	0 20	1	1 0	7	1 20	11	3 31
28 Matthew Crean.....	5	3 20	1	2 12	7	1 32	12	0 11
29 John Leonard	10	1 0			10	1 0	16	2 17
30 Daniel Grehan	9	2 0			9	2 0	15	1 22
31 Thomas Brien	0	3 20			0	3 20	1	1 26
32 James Curly	1	0 0			1	0 0	1	2 19
33 John Gurry	2	0 0			2	0 0	3	0 38
34 William R. Gurry	2	0 35			2	0 35	3	2 15
35 Thomas Kelly	2	0 0			2	0 0	3	0 38
36 Thomas F. Kelly	2	0 35			2	0 35	3	2 15
37 Francis Kelly	2	2 38			2	2 38	4	1 29
38 Luke Kelly	3	2 5			3	2 5	5	2 35
39 William and John Gurry	2	0 0			2	0 0	3	0 38
40 Daniel Fallou	2	0 0			2	0 0	3	0 38
41 Daniel and Owen Anigly	2	0 0			2	0 0	3	0 38
42 Matthew Fouly.....	2	0 4			2	0 4	3	1 4
43 Thomas Watch.....	2	0 25			2	0 25	3	1 38
44 Edward Watch.....	2	1 30			2	1 30	3	3 31
45 John Brennan.....	2	2 19			2	2 19	4	0 39
<i>Carried forward</i>					250	2 29	566	1 7

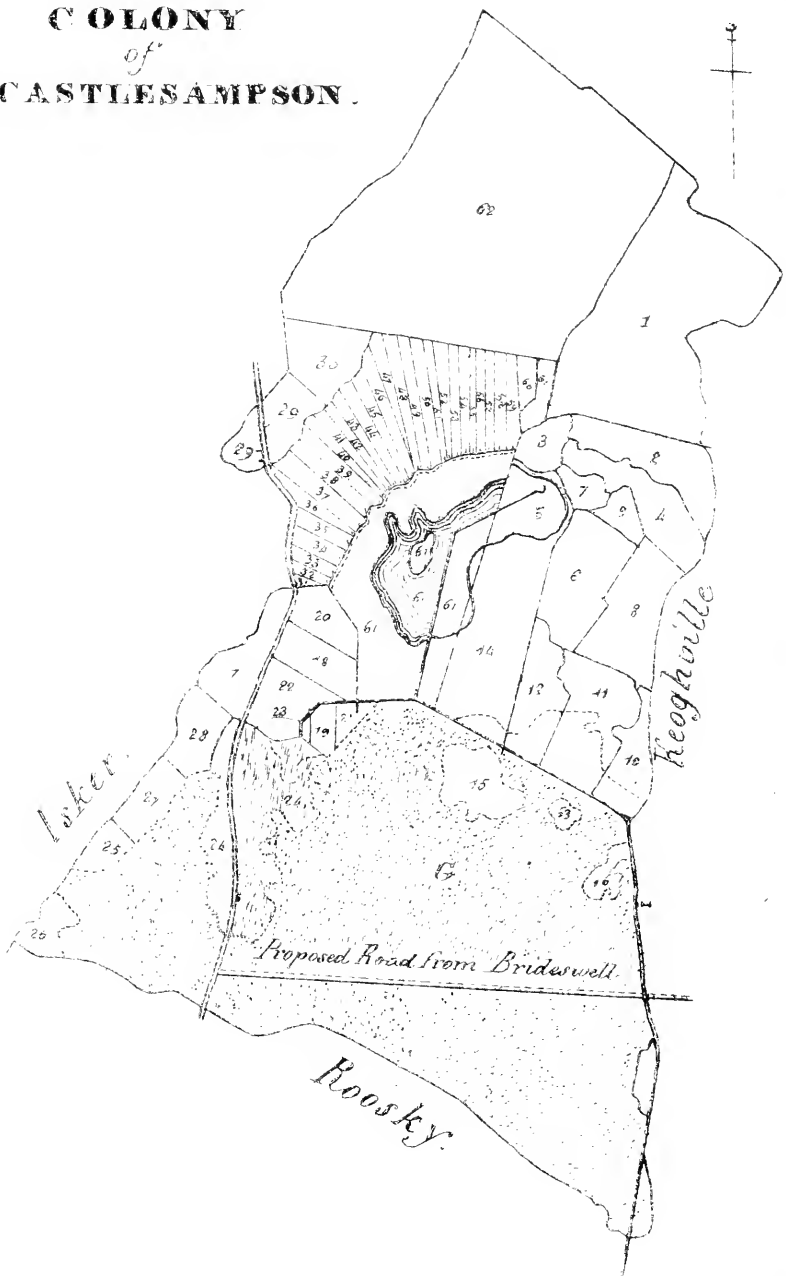
COLONY of ISKERBANE



32 Irish Plantation Perches to an Inch

Drawn by H. Parsons

COLONY
of
CASTLESAMPSON.



48 Irish Plantation Perches to an Inch.

	<i>Arab. & Past.</i>			<i>Bot., &c.</i>			<i>Total Irish.</i>			<i>Total Engl.</i>		
	<i>A.</i>	<i>R.</i>	<i>P.</i>	<i>A.</i>	<i>R.</i>	<i>P.</i>	<i>A.</i>	<i>R.</i>	<i>P.</i>	<i>A.</i>	<i>R.</i>	<i>P.</i>
<i>Brought forward</i>							250	2	29	566	1	7
46 Michael Gurry	5	0	16				5	0	16	8	1	2
47 Bryan Gurry.....	1	3	26				1	3	26	8	0	15
48 Thomas Kelly.....	2	0	0				2	0	0	3	0	38
49 William and R. Gurry	1	3	20				1	3	20	3	0	5
50 Pat Loughe	1	3	5				1	3	5	2	3	21
51 William John Egan	1	2	36				1	2	36	2	3	7
52 Daniel Fauaher.....	2	0	0				2	0	0	3	0	38
53 John Cumber.....	1	3	5				1	3	5	2	3	31
54 Thomas Loughe	1	2	35				1	2	35	2	3	6
55 William Cat. Harny	1	2	35				1	2	35	2	3	6
56 Thomas Coin.....	2	0	31				2	0	31	3	2	8
57 Bartle M'Nally.....	2	2	0				2	2	0	4	0	8
58 William P. Murray.....	2	3	20				2	3	20	4	2	24
59 Michael T. Kelly.....	2	2	27				2	2	27	4	1	11
60 Edward Hardiman	1	3	24				1	3	24	3	0	12
61 In common to the village.....	14	0	7	47	3	39						
62 ditto ditto	138	6	26	15	2	18	215	3	10	349	2	12
63 Bog Island.....				1	0	19	1	0	19	1	3	10
General Total of arable & past.							594	0	31	962	1	21
G Deep Red Bog							359	3	34	582	0	12
General Total							954	0	25	1545	1	33

* * * *Forty-eight Irish Plantation Perches to an Inch.*

I think it satisfactory to add, that two years' additional experience enables me to state that this system of colonising has answered my expectations fully; the drain has, as I anticipated, been used for the purpose of conveying manure and turf, a flat-bottomed boat having been given to the tenants by the landlord, and the Castle-Sampson tenant is no longer a pauper—he has become a small occupier of land; has a well appointed donkey and cart; has his stock of cattle, corn, and potatoes, and it would now not be very easy to get him to emigrate: and the landlord is satisfied at the manner in which his rents are paid.

The land of Castle-Sampson, Nos. 61 and 62 which was held in common, is now divided amongst the several occupiers, and has been cropped this year to a considerable extent by them.

THOMAS BERMINGHAM.

23, *Dover Street*,
Jan. 20, 1835.

In a work by Peter Gale, Esq. entitled, *an Inquiry into the ancient Corporate system of Ireland*, to be had of Richard Bentley, New Burlington-street, there is to be found much matter deeply interesting, regarding the rights of corporations. In it I find a highly curious document, a bill with the royal assent, sent into Ireland in 1641, for establishing a provision for the poor in that country, as entered in chancery, styled “ An act for the relief of poore orphants, and such lame, olde, blinde, and impotent persons as are poore and not able to worke, and for the punishing of rogues, vagabonds, sturdy beggars and idlers, and setting them to worke.” One cannot but regret that some measure of the kind has not been introduced into that country ; and really there is a vast deal to approve of in the above bill, which I understand only required that the Lord Lieutenant should have gone down to the house to have made it the law of the land.

Mr. Hart has kindly furnished me with a pamphlet, being *Statement of the proceedings of the Society for the Improvement of Ireland for the year 1828*, signed Edward Groves, Secretary, Mansion House, Dublin. This pamphlet contains many useful and highly interesting details as to the measures likely to benefit Ireland, which all must lament have been attended to so little ; however, the labours of that society are fortunately preserved to us, and will, it is hoped, prove yet of great use to this portion of the empire.

TUNBRIDGE WELLS
L O A N S O C I E T Y .

REPORT.

During the year 1834, the operations of this society have been extended in proportion to the increase of the funds; the whole of which have been constantly and entirely employed according to the principles of the society.

The average amount of the society's fund, or working capital for the past year, has been about 190*l.*; and with this sum 243 loans have been made, the aggregate value of which has been 1204*l.* 15*s.* Had the funds of the society been three times their present amount, they would still have been in circulation; for many applicants for loans have been refused that assistance for want of greater funds; a fact to be regretted, as wherever the influence of the society has been felt, it has invariably produced the object intended and wished, not only by relieving deserving persons under difficulties, assisting others in their various trades, but by promoting a spirit of industry and honest independence; also by uniting more closely in the bonds of respectful feeling and good

will, the classes of society who have bestowed the assistance with those who have received it.

It is a subject of congratulation to the society, that its assistance has prevented many families from becoming a burthen upon the parish. The timely aid afforded by the loans of this society, in cases of unexpected and unavoidable distress, have dispelled many a fear—soothed many a sorrow—and averted the last calamity of a falling labouring man, with its consequent degradation. It is gratifying to reflect that all this has been accomplished with means so small; and much more so, that these means have not been weakened by losses—not one case of dishonest defalcation having occurred.

There is but one more point to be noticed to this meeting, and which is perhaps the most encouraging of all—it is, that since the borrowers of loans have been called upon to pay four-pence in the pound, they have applied to the society with less hesitation, and have expressed much satisfaction at *themselves* bearing a part in the support of a society which does so much for them, and that they are thus permitted to gratify their honest and manly pride, by purchasing the assistance their circumstances require.

The following resolutions were passed :

RESOLVED,

1.—That the secretary to the society shall receive a salary of *£*l., and that the assistant secretary a

salary of 5*l.*, for their respective services to the society for the year 1835.

2.—That from the 1st of January, 1835, the treasurer be authorised to pay, at the rate of four per cent., interest on all sums lent to the fund, from 5*l.* and upwards.

3.—That any contributor to the fund, by loan, shall give the treasurer six months' notice of his intention to withdraw his loan.

4.—That the general meetings, held for the purpose of receiving the report and passing the accounts of the preceding year, shall, in future, be held in January.

5.—That the thanks of this meeting be given to the treasurer, for her unremitting and laborious exertions in carrying into effect the principles of the society.

6.—That the thanks of this meeting be given to the secretary and assistant secretary, for the services which they have hitherto gratuitously rendered to the society.

Rules and Regulations.

1.—The society shall be supported by loans, donations, and annual subscriptions; and the fund managed by a weekly committee of contributors, chosen at the annual meeting.

2.—Every contributor to the fund, either by loan, donation, or annual subscription, to have the privilege

of recommending an individual for a loan, subject however to the 6th rule.

3.—That a premium of four-pence in the pound be charged to the borrower, upon any loan when lent, to cover expenses.

4.—No money to be lent without good surety, who shall undertake, by signing a proper instrument, to re-pay any sum that the borrower at any time may fail to pay, when his weekly instalment should be made. One surety to be required for any loan not exceeding 10*l.*, and two sureties for all sums exceeding that amount.

5.—Each instalment for the re-payment of a loan to be made every Wednesday, between the hours of two and three o'clock in the afternoon, at the rate of one shilling in the pound.

6.—No loan exceeding 10*l.* to be advanced, except it should be found expedient by the treasurer to grant a larger sum: then such treasurer to have the power of calling a meeting of the managing committee (the treasurer being one) to consider the propriety of such loan; and if the majority of the committee be of opinion that such loan would be of great advantage to the borrower, then a loan not exceeding 25*l.* may be granted upon such authority—a notice of such resolution being signed at the time in the minute book, by the majority of the members present.

7.—Every borrower to have a ticket delivered to him when he receives a loan; and any borrower failing

to produce his ticket, and pay his instalment at the appointed time, stated in rule 5, to be fined sixpence for each omission, and to be liable to refusal of any subsequent application in consequence of such failure.

8.—The smallest loan advanced to be ten shillings.

9.—In case of non-payment of the instalment on any Wednesday, the secretary is to call upon the surety, and, if necessary, to enforce payment.

10.—No person in the actual receipt of parochial aid, to be accommodated with a loan.

11.—A general meeting to be held annually, in January, for electing managers, &c., and for general purposes.

12.—The committee to meet every Wednesday, at 2 o'clock.

GREAT LEINSTER RAILWAY.

In the following prospectus an imperfect sketch is presented of advantages likely to be derived to the public and shareholders from the construction of a railway from Dublin to Kilkenny, to be denominated *the great Leinster railway*.

Although the utility of railways, as the means of a cheap, rapid, and safe mode of communication, has for some years ceased to be matter of doubt; and that England and Scotland, and even the New World,* (where they have been adopted to an incredible extent,) are being intersected with them in every direction, as yet no effort has been made for their introduction into Ireland, with the single exception of the short line of seven miles British, from Dublin to the harbour of Kingstown.

To whatever cause this may be owing, it cannot be attributed to any national unfitness of that country for this description of communication. The proposed railway from Dublin to Kilkenny offers inducements for the investment of capital surpassed by no similar undertakings either in England or Scotland. It will intersect or lead into the richest and most fertile

* Railways in America.—137 lines of railway projected
 46 „ „ „ completed
 Line from Baltimore to Pittsburgh, 330 miles.

counties of Leinster and Munster, and be the line of communication with all the chief towns in the counties of Waterford, Tipperary, Cork, Kerry, and the south-western portion of Wexford, to all of which branches will in all probability ultimately extend; while even the counties of Limerick and Clare may be brought by its means two hours and a half nearer Dublin. The proposed railway will thus command the trade and intercourse of the metropolis and port of Liverpool, with the southern parts of Leinster and the entire extent of Munster; districts containing at least 3,000,000 of inhabitants.* The collieries of Castlecomer, † now imperfectly wrought, though abounding with the finest coal and culm for agricultural or manufacturing purposes, for want of a cheap and rapid communication with the metropolis; nor should it escape observation, that the description of coal found in the collieries of this district, and known by the name of “carbonaceous, or stone-coal,” is peculiarly adapted for locomotive engines.

The facilities which present themselves for the construction of the projected railway are considerable. It has the advantage of opening at either extremity

* According to the census of 1831, Munster contains 2,227,152 inhabitants, Leinster 1,909,713, total 4,136,865.

† The quantity of coal raised in the Leinster coal district, annually, according to the report made by order of the Royal Dublin Society, by Richard Griffith, Esq., is—coal 70,000 tons, culm 100,000 tons.

to communication with the sea, by means of canal or river navigation; it approximates to extensive fields of granite and lime-stone; and along the entire line are found all the materials requisite for its formation, except iron;* the sum to be expended in the purchase of land, and the price of labour, being considerably less than they are in England. The greatest ascent will not exceed 1 in 880;† the entire ascent being less than one hundred and fifty feet, and a continued level of nearly thirty miles.

The cost of the proposed undertaking has been estimated by men of the first professional eminence, not to exceed 10,000*l.* per British mile, and that 1,000*l.* per mile will be sufficient for its annual maintenance. The probable revenue is calculated rather from the existing trade and intercourse,‡ than that likely to take place from the improved system of communication by railway; notwithstanding, it has been ascertained that the increase consequent upon

* The cost for iron cannot exceed one-tenth of the usual expenditure on railways. On the Liverpool and Manchester, the cost of iron was about one-thirtieth.

† On parts of the Liverpool and Manchester line the ascents are 1 in 96.

‡ The number of passengers (200 daily) to and from Dublin and Kilkenny, as given in the estimated income, may apparently contradict this statement. But it is founded on the presumption that all the passengers to and from the metropolis, and the south of Irelaad, at present proceeding by different routes, would pass along the railway.

the construction of railways has in many instances exceeded *forty-fold*, and in no instance being less than three-fold. Nor has any revenue been calculated for the conveyance of *live cattle*§ to the Dublin market, or for the purpose of being shipped to Liverpool, the transmission of his Majesty's mails, parcels, &c. ; although eventually there is little doubt but these must become sources of great income to the railway.

As the main object proposed is to promote a work of great utility to the country, and to afford extensive employment to the labouring classes, a consideration of deep importance, as admitted by all those interested in the welfare of Ireland—with such objects in view, it would be matter of regret that this undertaking should interfere with the canal or river navigation, to which it will in some measure be parallel: it is, however, most gratifying to be enabled to state, that in every instance where objections have been made by canal companies, evidence has since been given before committees of both houses, that the trade of the canals, had, instead of diminishing, been considerably increased since the formation of railways. This is particularly illustrated in the instances of the

§ The quantity exported in 1831, to Liverpool alone, was—91,111 head of cattle, 160,487 sheep and lambs, and 156,001 pigs; in the estimated revenue of the “Eastern counties railway,” comprising Essex, Suffolk, and Norfolk, the item for conveyance of live cattle is 157,055*l* annually.

Irwell navigation, and the Leeds and Liverpool canals.

This prospectus is put forward, after much deliberation and communication with eminent practical men, (extracts from some of whose letters are given,) by a committee of Irish gentlemen, whose only motive is to promote works of permanent utility which will tend to develop the great natural resources of Ireland. With the view of advancing this desirable object, copies of this prospectus will be forwarded to such noblemen and gentlemen as are likely to co-operate in promoting this important national undertaking; and when a sufficient number have signified their concurrence, a public meeting will be convened to consider and arrange the necessary details.

Extracts from Correspondence referred to.

“ In reference to the projected Leinster railway, I can only repeat what I expressed to you verbally last week, that if the excavations, embankings, and building-works are not excessively heavy, I am of opinion that the railway in question can be executed at 10,000*l.* per mile—more particularly as I find that building materials are to be found upon the line.

“ I consider the annual expenditure of 1,000*l.* per mile more than sufficient for maintenance.

“ The works on the Newcastle and Carlisle railway, upon which I am at this moment engaged, are

very formidable, and the whole expense of its completion will fall *considerably short* of 10,000*l.* per mile.

(Signed) FRANCIS GILES, C.E."

" We have, in order to illustrate more intelligibly the very few professional observations we can offer you in the present stage of this interesting subject, traced on the accompanying map, taken from our Mr. Mullins' 'Thoughts on Inland Navigation,' the probable course which the levels of the country lying between this city and Kilkenny would throw your projected railway into. You will perceive on reference to the table of heights in the margin of this map, that the summit level of the Grand Canal stands 278 feet over the sea, and assuming, as you do, that a lower pass of, say 30 feet, (20 of which was ascertained by the late Mr. Killaly) could be had for this summit, than the line the Grand Canal is carried in, it would bring the level to 248 feet over the sea; and following up your views that Dolphin's Barn is a judicious point to start from, and taking it at an elevation of 70 feet over the sea, we reduce the actual natural ascent to 178 feet. If then in the construction of the railway, as the ground in the first two miles rises so rapidly, the road were carried over a series of arches at an elevation, say of 28 feet above the starting point, it would reduce the total height to be overcome to 150 feet; and your taking for

granted what we know to be a fact, that the commencement of the summit level can be pushed at least 25 miles from Dublin, it would leave the ascent of the projected road at the rate of 6 feet per mile, or 1 in 880.

* * * * *

“ We are satisfied that a line can be laid out between Dublin and Kilkenny, which, if judiciously directed, and permanently executed, can be constructed for 10,000*l.* per mile, and afterwards maintained, for an indefinite term, at the rate of 1,000*l.* per mile per annum.

(Signed) HENRY,
MULLINS,
MACMAHON.”

At the request of the acting committee, the following gentlemen will receive and forward all communications on the subject:—N. A. VIGORS, Esq. M.P., Chester Terrace, Regent’s Park; PETER GALE, Esq., Ashfield Hall, Queen’s County, & 12, Park Street, Westminster; P. J. HART, Esq., 50, Berkeley Street, Portman Square.

Note.—I feel that in putting this prospectus forward, I am doing service to the line proposed by myself to run across from Galway to Dublin, traced on the map. In my opinion, there will be one

common track to Vicarstown, crossing the river Barrow at Grattan Bridge—from whence the Kilkenny line should branch off, by Abbeyleix, and the Galway line by Roscrea, Bur, Bannagher, Loughrea, to Galway, thus communicating with all the southern and western towns, and opening out the great bogs and mountains to colonization and cultivation, by procuring for their produce the best market.

At a meeting held at the Labourers' Friend Society's room, at Exeter Hall, in the month of January, 1835, Sir David Barry, in the Chair :—

A statement somewhat as follows was sent in by Mr. Thomas Bermingham, proposed and carried, and given, for presentation to the Irish government, to the chairman, who from his knowledge of Ireland, (having been so lately on the medical commission of inquiry through that country,) as also from his anxiety to forward the measure contemplated in that statement, namely, the cultivation of the waste lands, with a view of employing the superabundant hands, was the person in every way the most proper to hand it to government.

RESOLVED,

That it is of the utmost importance to the empire at large, that the mass of unemployed Irish poor, now in a state of misery and destitution, should be furnished with employment as a means of existence.

That it appears from the evidence of practical men, engineers employed by government, and land agents, given before committees of the house, appointed to inquire into the state of Ireland, that there are vast tracts of mountain and bog land in that country, which only require a proper application of capital to become highly productive, and to afford employment to the poor, and a fair profit to speculators.

That however desirable the cultivation and improvement of such wastes, both to proprietors and those for whom employment is thus sought, yet from the unfortunate circumstances in which estated gentlemen are placed, whether from embarrassments from debt or old family settlements, or such like causes, a clear valid title to such lands cannot be made out. It appears therefore to be the first duty of the legislature to clear the way, so as that a good title can be made to such lands, either to individuals or to companies, who from mixed motives of philanthropy and interest, may be inclined to lay out capital on the improvement of such tracts of waste land.

That as the first step to this desirable improvement, government be solicited to bring in a comprehensive measure on the meeting of parliament, giving like powers (as have been given to commissioners of wide streets, or as already given to the canal companies of Ireland,) to juries, to value such waste lands, (when called upon by the owner of such estates,) giving power to such proprietors to sell the same; the purchase money to be invested for the satisfaction of all incumbrances or claims affecting the same. By this means a spur will at once be given to the improvement of uncultivated tracts. The value so ascertained will be considered as a fair one. The feeling that undue preference has been given to one landlord

over another entirely avoided, and the resources of Ireland in this way developed in a manner likely to produce vast results to the empire at large.

The profits returned from lands managed for the London companies in the north of the kingdom, may be given as inducements to the establishment of similar societies in the south and west. To which I now add, that it would be desirable were a power given to the owners of collieries in Ireland, to charge the inheritance with a sum sufficient to open them. There are coal and other mines in Ireland which would at once be opened if some legislative enactment was brought in, by which *life* proprietors could raise money to open out and work the same, and be allowed to mortgage the estate for a sum sufficient for the purpose. In the Queen's County, Roscommon and Leitrim, and many other parts, the benefit in setting numerous labourers at work would at once be felt, and be of infinite advantage to the proprietors and the country at large.

The following Sheet has been found useful in ascertaining the condition of the Peasantry on estates in Ireland under my management, and will be found, it is thought, so to Proprietors of estates there, and also in England. If brought out on one large roll of parchment or paper, and hung up in the office of the Agent, or the study of the Proprietor, it would enable them at one glance to see the actual state of the Tenantry, and of the Poor on the Property, and would at the same time shew on what parts of the Estate room could be made for such, and land improved by them; it would point out their condition, and no doubt then a remedy would be applied, and much of the evils to which the poor (on these estates) are now exposed, avoided.

A roll of this kind, with some alterations, perhaps as to the headings, would be found useful in ascertaining the actual state of the Poor in parishes in England also; and if hung up in the Poorhouse as a constant sheet of reference, might prevent much of the imposition to which parishes from want of necessary information are now daily and hourly subject to.

Number	Townlands or Parishes.	Contents of the Farm or Cottage garden.			Name of Occupier.	Half-yearly Rent.		
		A.	R.	P.		£	s.	d.
1	Hardwood	..	..	..	Jas. Doorley	0	0	0
2	..	5	2	..	Widow Doorley	2	0	0
3	..	7	..	..	John Curley	2	0	0

No.	Males.				Females.				Total number in family.
	above 60 years	from 20 to 60	from 14 to 20	under 14	above 60	from 20 to 60	from 14 to 20	under 14	
1	1	1	..	..	..	4	1	..	7
2	..	..	1	2	0	1	2	2	8
3	1	..	1	2	..	..	2	2	8

LIVE STOCK.

Number.	Number.
1 2 3	Milch Cows.
1 1 1	Dry Cows.
1 1 1	Calves.
1 1 1	Breeding Sows.
1 1 1	Other Pigs.
1 1 1	Goats.
1 1 1	Brood Mares.
1 1 1	Draft Horses.
1 1 1	Other Horses.
1 1 1	Foals.
1 1 1	Donkeys.
1 1 1	Their Foals.
1 1 1	Sheep.
1 1 1	Lambs.

Number.	Corn in Stack.					Potatoes in Pits	From Conacre.	Implements of Husbandry								Hay.	
	Wheat.	Oats.	Barley.	Rye.	Peas.			Carts.	Cars.	Drays.	Ploughs.	Harrow.	Spades.	Shovels.	Rakes.		Hoes.	Forks.	In Cock.
1 2 3	2 2 2	2 2 2	2 2 2	2 2 2	2 2 2	stone 200 500	stone 160	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1

Number.	Household Furniture.						Beds.		State of House.						
	Dresser.	Chairs.	Spinning Wheels.	Reel.	Tables.	Corn or Meal Bin.	Tubs.	Churn.	On the Ground.	Off the Floor.	Whether in a good or, bad state.	Are there Win- dows.	Do they open and shut.	How many rooms.	Is there a Chimney.
1 2 3	1 1 1	5 2 6	2 1 2	1 1 1	1 1 1	1 1 1	1 2 1	1 1 1	1 1 2	1 1 2	yes yes yes	no no no	.. .. no	1 1 2	no no yes

SCHOOLS.

Number.	How supported.	Number attending.	Periods of the year.	Name of the Master.	Mistress.	Rate of Payment.	Or is it free.	Name of Clergyman.	Protestant.	Roman Catholic.
1	public	::	::	::	::	1s. 8d. per qr.	no	::	::	::
2	::	::	::	::	::	1s. 8d. per qr.	::	::	::	::
3	::	::	::	::	::	2s. per qr.	::	::	::	::

Number.	Cost of Fuel.	Quality.	Labour.							
			Where.	Rate in Summer of pay.	In Winter.	Is there work on roads.	At what period.	Is work done by task.	Do the females work out of doors.	How many spin or knit.
1	10s.	Turf	With the	8d.	5d.	yes	Summer	no	in harvest,	All able
2	nothing	::	Farmer at	& 10d.	& 6d.	::	generally	::	at turf, potatoe planting, &c.	to do so.
3	::	::	home.							

EXTENT OF EMPLOYMENT.

Number of Agricultural Labourers above 16 years of age.

No.	Number permanently employed.	Number occasionally employed.	Number out of employment.	Seasons of the Year.
1				
2				
3				

No.	Quantity of Land, whether Commons, Bog or Mountain capable of improvement.			Not worth improving.		
	A.	R.	P.	A.	R.	P.
1						
2						
3						

Further Extracts from Foreign Communications.

NEW YORK.

Abstract from the Superintendents of the Poor from several Counties, for the Year ending 1st December, 1833.—United States.

In 55 counties, paupers relieved or supported,	35,777—
Of this number there were in the workhouses at the close of the year	5,927
Admitted in the course of the year.....	10,494
Making	<u>16,421*</u>

for which number I calculate accommodation was provided in the parish workhouses, whilst the residue were cases which were relieved out of the workhouses.

To the workhouses in the above number of counties, there are 5,776 acres of land attached, constituting the parish farms.

The entire expense for the relief of all the poor was in that year \$295,239, or about £74,000.

The actual value of the labour of the paupers was \$31,217, or about £8,000.

The amount saved in consequence of the labour of the paupers \$23,670, or about £6,000.

The above expenditure includes binding out apprentices and giving instruction to 1,431 children, inmates of the workhouses.

The value of the poorhouse establishment taken at the close of the year \$865,770, or about £216,500.

* Of the number relieved — 602 were lunatics, 219 idiots, and 48 mutes.

Being at the rate of about \$52, or about £13 for each inmate supposed to be provided in the house.

The amount at 4 per cent. interest on this capital would be \$2, or about 10s. annual charge for the accommodation of each inmate on the establishment.

The average expense of each pauper is stated to be about \$33 per annum, or about £8.

In the sum above stated there was spent on the transportation of paupers about.....	\$5,000
Superintendents	12,000
Overseers	11,000
Justices	3,000
Keepers and officers of poorhouse	22,000
Physician for attendance and medicine....	11,000
	<hr/>
Making a total sum of	<u>\$64,000</u>

Or about £16,000 expended on these portions of the establishment.

Why then could not parishes in the metropolis, in towns, and the country throughout the United Kingdom, pursue a similar course?—

There is waste land in the neighbourhood of the metropolis and other places, which could be appropriated to these purposes.

If settlements interfere, let the term of leases be enlarged, and a power given to the proprietors or the lord of the manor, to make leases for ever, for the purpose of ensuring the farm to the parish—without the power of taking any sum by way of fine to the injury of the entail.

At this time the parishes could raise money on mortgage of the rates, at 3 per cent. I have no doubt; and as, when the new poor bill comes into general use, the parishes must erect new or enlarge the old workhouses, they had better at once make these buildings on a fifty acres farm; then send their able-bodied or those at all capable of work to the farm to cultivate it, and supply the town poor-house with vegetables, &c. &c. In the building of these additional workhouses, arrangements might be made to economise fuel, by having hot-water pipes sent through the apartments (these are executed by Messrs. Lloyd and Foster, of Wednesbury, near Birmingham,) to heat them, and at the same time the boiler should be employed, and its furnace, in making soups, from vegetables and meat, &c. &c. on the plan given by Count Rumford in his essays, which are full of useful hints, to this day neglected, for feeding the poor at a cheap rate per head.

Surely this mode of managing the poor would be far better than as is done now in some of the London parishes *making the poor carry sand in bags a certain distance, then to drop it and be supplied with another bag, and then on their return a certain quantity of bread is given*; this I am assured is done at the present day, and is evidently intended to disquiet and drive the poor who are out of employment, from seeking aid from the parish.

RULES

FOR THE

SELF-SUPPORTING AND PAROCHIAL DISPENSARY,

CHESHAM, BUCKS.

The objects of the Institution are —

- 1st. To enable the labouring classes to ensure for themselves and their families medical attendance and medicines during illness, by their own small weekly payments.
- 2nd. To provide these benefits to paupers on an improved plan, and with less cost to the parish.

PART I.

Government, Honorary Members, &c.

1. An annual subscription of not less than 5*s.* or a donation of not less than 2*l.* shall constitute an honorary member.

Annual subscriptions shall become due on the 1st. of January, and shall be paid in advance.

2. A general meeting of the honorary members shall be held on the second Monday in April, annually,

in the Town Hall, at which a report of the proceedings of the institution during the preceding year, together with a statement of the accounts, shall be read ; and a committee, consisting of not less than twenty, nor more than thirty members, shall be chosen, and the other officers of the institution appointed.

3. No person shall be entitled to vote at the meeting of the honorary members, who has not been a subscriber for six months previously, or whose subscription is more than twelve months in arrear.

4. The privilege of voting by proxy at the general meeting of the honorary members, shall be confined to ladies and to the patrons of the institution.

5. The general management of the institution, the power of making and repealing laws, and of electing and removing officers, (except as provided by rules 2, 12, and 15,) is vested in the committee. The patrons, the president, the vice-presidents, the physician, the surgeons, the treasurer, the honorary secretary, and the honorary local agents, shall be members of the committee by virtue of their respective offices.

6. A special general meeting of the committee may be convened on any emergency, by the requisition of the president, or of two vice-presidents, or of the chairman of an ordinary committee, signified in writing to the clerk, and stating the purpose for which such meeting is required.—A week's notice must be given to each member.

This meeting must consist of not less than nine persons, and must confine its business to the objects stated in the notice.

7. An ordinary meeting of the committee shall be held at the dispensary house on the first Friday in every month (or oftener if required), at 3 p.m., for the admission of members, and for transacting the ordinary business of the institution. Five of the committee shall be summoned in rotation. Three members of the committee shall form a quorum. The clerk shall give a week's notice to those whose turn it is to attend; and in case any one so summoned shall not be present, or some other member of the committee for him, within half an hour of the time appointed, he shall pay a fine of one shilling.

At the ordinary meeting next after each quarter day, the accounts shall be inspected and passed. The clerk shall give notice of this meeting to the treasurer, honorary secretary, local agents, and surgeons, in addition to those members of the committee whose turn it is to attend in rotation.

8. If the president be present he shall take the chair, or in his absence a vice-president; but if neither be present, a chairman shall be chosen before the commencement of any other business.

All questions shall be determined by vote; should the votes be even, the chairman shall have the casting vote. The names of the members of the committee present, and the minutes of their proceedings,

shall be entered in a book by the honorary secretary, if present, or in his absence, by one of the committee, or by the clerk, should no objection arise to his being present; such minutes to be authenticated by the signature of the chairman.

9. No existing rule shall be altered or rescinded, and no new rule made, until it has been submitted, in the first place, to two ordinary meetings, and finally agreed to by a special meeting of the committee.

PART II.

Duties, &c. of Officers.

10. The treasurer shall be responsible for such sums of money as shall be paid into his hands by the honorary secretary, or by the clerk, or by the collector, or by any other person on account of this institution, and shall discharge the amount of all orders for payment, signed by the chairman of an ordinary committee.

He shall balance his cash account quarterly, and supply the clerk with a duplicate thereof; and shall invest any surplus of the funds as directed by the committee.

11. The honorary secretary shall be present, if required, at all general meetings of the honorary members, or of the committee, and shall conduct such of the correspondence, and transact such of the business of the institution, as may be entrusted to him by the committee.

12. Any surgeon, residing in Chesham or its neighbourhood, who is legally qualified to practise, and who is an honorary member of the institution, may propose himself for election as a surgeon of the dispensary at a general meeting of the honorary members, or, in any emergency, at a special meeting of the committee, which shall have power to appoint him provisionally till the next general meeting of honorary members.

13. The surgeons, in cases of difficulty, and where it may seem desirable, may call in the aid of the consulting physician.

14. The clerk shall keep a register of the name, age, date of admission, residence, and occupation of every free member, and shall receive and take account of their payments; he shall collect the deposits received by the honorary local agents or by the local secretaries, quarterly, as well as the subscriptions of parishes; he shall be answerable for all monies paid into his hands on behalf of the dispensary, and will be required to give security before entering on office; he shall discharge the petty cash expenditure of the institution, and balance the accounts previous to each quarterly meeting; he shall issue the summonses for the ordinary committee, according to rule 7, and collect the fines of the members of the committee for non-attendance; he shall also report at each ordinary committee, the names, &c. of those free members who are liable to be expelled, according to rule 25, as

well as of those who have died since the preceding meeting, and full particulars of such as may wish to be admitted as free members ; he shall take charge of all parochial tickets sent to the dispensary, and produce them for inspection at each ordinary committee ; he shall keep the accounts, documents, and papers of the institution, in such manner as the committee or the honorary secretary may direct ; and shall in all things act under their control.

15. The dispenser shall be appointed by the surgeons, subject to the approval of the committee, and he may be dismissed by them at any time ; the dismissal, with the reason of it, to be reported at the next committee meeting. The appointment or dismissal must be sanctioned by the majority of the surgeons. He shall take charge of the drugs and stores of the establishment, and give an account of all articles received by him ; and take stock of the drugs at the end of each dispensary year ; he shall not send any order for drugs, &c. without the signature of one of the surgeons ; he shall not absent himself from the dispensary without permission ; and shall dispense medicines at the appointed hours, and at other times if required ; he shall on no account prescribe for any patient, nor administer any medicines, except by prescription of the medical officers, with the date affixed ; he shall keep a register of the application and discharge of patients, both free members and paupers, with the result of each case.

16. The dispenser shall reside in the house, and be answerable to the committee for its being in a proper state of order and repair. He shall keep an inventory of the effects and furniture belonging to the institution, and be accountable for the loss of any, for which he cannot assign a sufficient reason. He will be required to give security before entering on office.

17. Honorary local agents may be appointed in surrounding villages, where no committee is formed. They shall receive the payments and fines of free members residing within their district; and report applications for admission, with their opinion as to the eligibility of the applicants.

18. A collector shall be appointed to receive the honorary members' subscriptions, and to convey the same to the treasurer. He shall receive such salary as the board may appoint.

PART III.

Free Members and Patients.

19. The free members shall consist of working men, their wives and children, and any other persons who are unable to pay for medical advice and drugs in the usual manner:—those above fifteen years of age shall pay *one penny* per week each; and those under that age *one halfpenny* per week.

20. Members of the Chesham Friendly Society,

or of other Benefit Societies founded on the same principle,* insuring not more than 8s. per week in illness, *if men*, and not more than 4s. per week, *if women*, shall be admitted as free members of this institution, on payment of 3*d.* per month, provided they are eligible according to rule 19.

21. In the case of labourers depending for support only on the usual rate of farming wages, and of other persons in like circumstances, all the children of one family under fifteen years of age may be admitted as free members, by a payment of *three halfpence* per week.

22. Persons wishing to become members, must leave their names and places of abode with the clerk or local secretary, not less than two days before the meeting of the committee at which they apply for admission. They shall also, if required, attend at the committee, and if approved, shall receive a blue ticket, signed by the chairman, for which they shall pay *one penny*, and be furnished with a copy of the regulations relating to free members, and shall be enrolled in the register by the clerk.

23. The blue ticket shall contain a certificate of admission, the number, name, and age of all members admitted by it, and a form for the receipt of all payments for the year following. It must be renewed

* The Missenden Provident Society, the Sarratt Friendly Society, and the West Herts Friendly Assurance Society, are societies of this description.

annually, and produced whenever the member pays his subscription, which shall be receipted on the ticket by the clerk, honorary local agent, or local secretary, with his initials. Every member above fifteen years of age shall have a ticket to himself; but a married woman's admission and subscription may be entered on her husband's ticket; and members, under fifteen, upon that of their parents.

24. Those free members who pay their subscriptions at the dispensary, may attend on any Friday or Saturday mornings between ten or twelve. Those who are not entitled to attendance in sickness, may pay up for it at any other time to the surgeons or the dispenser.

25. No member shall be entitled to relief unless all arrears are paid up.

Every member being one month in arrear shall pay a fine of one penny.

If two months in arrear, a fine of three pence.

If three months in arrear, he shall, after having had due notice given him by the clerk or local secretary, be excluded from the institution: but the committee shall have the power of re-admitting him, should sufficient excuse be shewn for his neglect.

26. Every member producing on his admission a certificate of health, shall become qualified for receiving the benefits of the institution, as soon as he shall have been enrolled for *three months*, if not then in arrears; or he may become so qualified

immediately, by paying a sum equal to six months' subscription, as entrance money.

Every member not producing a certificate of health, shall become qualified as soon as he shall have paid twelve months' subscription.

If any member fall ill before he is qualified, he may become so immediately, by completing the twelve months' subscription at the time, in a single payment; but if he is unable to do this, and has been enrolled for one month, he may (on obtaining a recommendation signed by two honorary members,) be permitted, instead, to pay an extra weekly contribution of not less than 1*d.* per week, until, by such payments, he shall have completed the twelve months' subscription. This recommendation will entitle him to immediate benefit.* If he neglect to pay the additional contribution, he shall be subject to the same fines and disabilities as are imposed on arrears of the regular payments, according to rule 25.

* Form for tickets of recommendation :—

We recommend
 a free member of the Dispensary, to receive the benefits of that Institution immediately, believing that _____ is unable to pay the sum of _____, now remaining due on his first year's subscription; and desiring that he may be permitted to pay an additional weekly contribution, until the above sum is completed.

 _____ } Honorary Members.

27. The surgeons may admit any person who is ill to the privileges of a free member, if he is admissible according to rule 19, and on his complying with the following provisions—viz. to pay a sum equal to twelve months' subscription at the time, to have his admission ratified, and his name, &c. enrolled at the next committee, according to rule 22,—and at that committee either to propose a healthy person to be admitted with him, or to pay the sum of one shilling.

28. Every free member shall have the choice of either of the surgeons belonging to the institution.

29. Free members applying for medical assistance must produce their tickets, in order that the receipts may shew whether they are entitled to such assistance.

30. Those patients who are able to do so, must attend at the dispensary on one of the days, and at the hour, if possible, which their surgeon may have fixed for seeing them there. They will, on their first visit, be supplied with a prescription paper, which they are to keep clean, and bring with them whenever they come to the dispensary: this paper must be returned to the dispenser at the close of their illness: if it be lost or destroyed, they will be fined one penny. If any patients omit their attendance at the dispensary for four weeks, without the permission of their surgeon, they will be considered as discharged. Those who are too ill to attend at the dispensary,

must apply, if possible, before nine o'clock in the morning to their surgeon, who will visit them at their own houses. In cases of accident or sudden illness, should their own surgeon be from home, or unable to attend, they can have the attendance of either of the other surgeons.

31. The patients must find their own bottles and bandages, or may borrow them of the institution, provided they leave with the dispenser the cost, which will be repaid to the patient when the bottles and bandages are returned.

32. Free members may be vaccinated gratis at the dispensary. Those who apply for vaccination must leave their names a week previously with the dispenser.

33. No female member will be attended in her confinement, in right of her weekly or monthly payment; but she may have the medicine necessary for that period from the dispensary, if attended by one of the surgeons of the institution.

34. No member of this institution shall be entitled to medical attendance or medicines, in right of his weekly contribution, for certain diseases contracted by profligacy or immorality. The application of this rule to individuals, to be determined by the surgeons.

35. If the funds will allow of it, a subscription may be annually paid both to the Aylesbury and to the West Herts infirmaries, or to one of them, in order to procure the right of recommending any

patient of this institution (for whom it may be desirable) for admission into one or other of these infirmaries. The letter of recommendation must in every case be signed by the surgeon of the dispensary, who has previously attended the patient.

36. Free members may be supplied with trusses, on payment of half the cost price.

37. Patients who wish to avail themselves of the benefit of the physician's advice, are expected to apply to their surgeon for a note of recommendation.

38. Those free members living more than one mile from the town, but within the parish in which their medical attendant resides, shall pay after the rate of one shilling for every other journey, should that be required.

Those free members living beyond the parish in which their medical attendant resides, but within five miles of his residence, shall pay one shilling for every journey.

The parish of Chesham Bois shall, for the purposes of this rule, be considered as forming part of Chesham parish.

Journies during the night, from sun-set to sun-rise, shall be charged double.

The surgeon shall enter each journey on the prescription paper at the time of his visit, and it must be paid for to the dispenser on the delivery of the medicines.

It shall, however, be in the power of the surgeon

to remit the charge for the journey, in cases where he believes the patients cannot afford it. This charge will also be remitted, on the recommendation of honorary local agents in surrounding villages.

39. If any free member or patient has reason to complain of neglect or of the misconduct of any of the officers of this institution, he is requested to inform the committee, or the surgeons, who shall make strict inquiry into the circumstances of the case, and redress any real grievance.

40. An annual meeting of the free members shall take place on the first Monday in May, at 6 p.m., when all matters relating to their privileges may be freely discussed, and any information may be afforded concerning the progress of the institution, or alteration in the rules (as far as the free members are concerned,) during the preceding year. Five honorary members, at least, shall attend at, and regulate this meeting; one of whom shall take the chair. The free members shall be admitted by tickets, to be procured during the previous week, from the clerk, or honorary local agent, or local secretary. No free member who is in arrears, or who is under the age of twelve, shall receive a ticket. The parents of free members under the age of twelve (although not members themselves, may receive a ticket instead of their children.

41. All members neglecting to comply with these rules, or interrupting the business, or attempting in

any way to defraud or impose on the institution, will be reported to the committee, and be liable to be fined at its discretion, or to be expelled.

PART IV.

Parishes.

42. Parishes wishing to provide for the medical care of their sick poor from this institution, may be admitted according to a form of contract, to continue in force one year, and be signed by competent authorities on the part of each parish, and by the chairman of the committee on the part of the dispensary. The contract must contain provisions on the points left open for arrangement in the following rule.

43. First—as to the amount of subscription. This may be either made by a fixed payment for the year, or it may vary, according to the number of pauper patients relieved, each sick pauper being admitted by a certain payment, which shall entitle him to relief during sickness;—the amount of the *payment per year for all the paupers*, as well as of the *payment per head for each sick pauper*, will be settled between each parish and the committee of the dispensary, according to circumstances, regard being had in each case to the population of the parish, and to its distance from the dispensary, or from the surgeon who is to attend its poor.

Secondly—as to medical attendance. The authorities of every subscribing parish may appoint any of

the surgeons of the institution to attend its poor ; and if more than one is appointed, an arrangement must be made in the contract as to the manner in which the attendance shall be apportioned to each.

44. The sick paupers are to apply with yellow tickets of recommendation, signed by the overseer, which shall entitle them to medical attendance during their respective illnesses.

At the close of every year, such pauper patients as remain on the medical books, shall, if the parish continue its connexion with the dispensary, be attended during their respective illnesses without further charge to the parish, provided such illness does not exceed one year.

The sick paupers must comply with the regulations for patients in rules 30 and 31. If they neglect to do so, or interrupt the business, or attempt in any way to defraud or impose on the institution, they will be liable to be discharged without further relief.

45. Parochial payments, in whatever manner they are made, must be discharged quarterly. Midwifery, and journies beyond the parish, shall not be included in any parochial agreement with this dispensary. Trusses and bandages are to be charged as extras, at cost price. Splints, and other apparatus for fractured bones, are to be included in each contract.

PART V.

Funds.

46. The funds shall be divided into two parts, and the accounts kept distinct.

The honorary fund shall consist of contributions received from benevolent individuals; of the donations and subscriptions of the honorary members; also of the sums arising from the sale of tickets and rules; and of the fines of members of the committee. It shall be applied to the official expenses of the institution; including the rent and taxes of the dispensary house, furniture and repairs, firing and candles, salaries of clerk or assistant secretary, and of local clerks or secretaries, housekeeper's or servants' wages, collector's salary, stationery, and printing.

The insurance fund shall consist of the contributions, fines, forfeitures, and payments for journies of free members, and of the subscriptions of parishes, and shall be applied to the medical expenses of the institution: that is to say, to the salary of a dispenser, the cost of drugs, of implements for dispensing, and of surgical instruments, and the remainder (if any) divided among the surgeons at the end of every year, according to the number of patients attended by each.

Annual subscriptions to hospitals and infirmaries shall be paid from the honorary fund, if this will

suffice for the purpose, after defraying the regular official expenses of the institution ; but should this not be the case, these annual subscriptions may be paid from the insurance fund, if the majority of the surgeons consent to such payment.

PART VI.

Branch Dispensaries.

47. The inhabitants of any adjacent town or village, wishing to avail themselves of the benefits of this institution, may form a branch to it, provided that they raise a sufficient amount of honorary subscriptions to defray the additional expense which the extension of the plan may prove to the honorary fund of the dispensary.

48. A committee must be formed for the management of each branch, which shall have power to admit members, and transact any of the local business ; but its proceedings must be in conformity with the rules of the dispensary, and must be reported quarterly to the central committee. For rules 6, 7, and 8, the local committee may substitute its own regulations. This committee shall be considered as a part of the central committee, and any members of the one, may vote at the meetings of the other.

49. A clerk or honorary secretary must be appointed by every local committee. The duties of his office are similar to those of the clerk of the dispensary, and are comprised in rule 14.

50. Surgeons residing in, or connected with places in which branch institutions are formed, may be appointed by the title of local surgeons, if they are eligible, according to rule 12. They shall receive their proportion of the surplus of the insurance fund, with the other surgeons of the institution, according to rule 46. They may, if convenient to themselves and the patients, supply the medicines from their own houses, for which they are to be remunerated in the following manner. The average cost of the medicines supplied to each patient at the central institution will be ascertained at the close of the year, and the local surgeons shall receive at the same rate per head, for the medicines which they have given to their dispensary patients. An allowance of 20 per cent. calculated on this payment for medicines, is to be likewise made to them for a dispenser. The local surgeons must keep an account of the application and discharge of each patient, with the result of the case, and report it annually to the dispensary. They may substitute their own arrangements for seeing patients in place of rule 30.

51. Free members applying to local surgeons for medical assistance, must bring, within twenty-four hours from such application, a certificate from a local secretary or from the clerk of the dispensary, stating that such member is entitled to medical assistance, according to the rules. Rules 24 and 29 are not binding on the free members of branch dispensaries.

52. Parishes containing or adjacent to a branch institution, may appoint the local surgeons to undertake the medical care of their sick poor, on their conforming to rules 42, 43, 44, 45.

53. The annual payments to local surgeons shall be made according to the number of certificates and parish tickets which they hold.

THIRD ANNUAL REPORT
OF THE
COVENTRY
BENEVOLENT OR SELF-SUPPORTING
DISPENSARY,

Read at a General Meeting of the Subscribers to the Institution,

Held at the County Hall, April 17, 1834,

THE RIGHT HON. VISCOUNT LIFFORD, IN THE CHAIR.

THE committee of the Coventry Benevolent Dispensary have much pleasure in submitting their third annual report to the governors and friends of this institution, as the experience of another year has considerably increased their confidence in the great utility of such an establishment in Coventry, and convinced them that the deserving and industrious mechanic will gratefully avail himself of its aid to avoid the degradation of applying for parochial or charitable assistance, and thus be prevented from increasing the large circle of dependent members of society.

The committee have this year arranged and published their rules, and having for three years carefully

watched their operation and re-modelled any that required it, they trust that these rules will be found permanently useful, and not only maintain the Coventry Benevolent Dispensary in its present state of prosperity and high repute, but serve to promote the establishment of similar institutions in other places, on a basis that will equally secure the same successful results. This dispensary has already attracted a considerable share of public attention: its principles have been favourably noticed in the report of the commissioners on the poor laws, in their appendix by Dr. Calvert, in the leading medical journals, in the Saturday Magazine, and in several other works of less public notoriety.

The committee beg to acquaint the governors that Mr. Nankivell and Mr. Bicknell, the surgeons to the institution, desirous that, as regards the purely medical department, the dispensary should be as far as possible self-supporting, have in the most liberal manner suggested that the dispenser's salary of £40, which by the third general rule should be charged to the honorary fund, be paid out of the free members' fund. The committee feel convinced that the governors will duly appreciate this sacrifice of pecuniary emolument on the part of gentlemen from whose exertions the extraordinary success of the institution may be principally traced, and without which the free members' contributions would never have been so large or so cheerfully and regularly paid. The

committee have thought it their duty to accept of this liberal offer from September last, the period at which it was made, and accordingly propose to the meeting the alteration of the third general rule.

The committee are desirous to place at the disposal of the ladies' committee, some further means of relief in cases of severe and tedious illness; as from the testimony of those ladies who have kindly visited this year, they learn that in such cases many persons are necessarily reduced to extreme poverty, and require more comforts and support than their own means can supply, and without which, their recovery is retarded. The ladies' report that the class of poor they have visited as patients to this Institution, are particularly deserving industrious persons, struggling hard to maintain themselves in honest independence; they have expressed themselves very grateful for its benefits, and much indebted to the surgeons for their kind and skilful attendance. The committee hope that the liberality of the public will enable them to appropriate such a sum in future as will allow the ladies' committee to relieve the most urgent of these cases.

The committee have the satisfaction to state that the balance in hand is greater than last year, but they deem it necessary to add that the honorary fund is less than it is desirable it should be, and recommend a more general appeal to the benevolence of the inhabitants of Coventry.

The committee are aware that the institution has to encounter some prejudices, and that it is supposed to relieve persons capable of paying the usual medical charges. Anxious to remove this most erroneous impression, they not only deny its correctness, but with confidence call the attention of the public to the constitution of the dispensary, as peculiarly calculated to prevent such an imposition. While in dispensaries of the ordinary kind such an abuse is well known to exist, in this institution the circumstances of the applicant for admission are laid before a sub-committee, appointed for the purpose of deciding on his eligibility, before he can be admitted as a member. The first of the free members' rules directs "That they shall consist of working persons and servants, their wives and children, who are *unable to pay for medical* advice in the usual manner." The seventh rule provides "That any member discovered by the committee to be ineligible, shall be erased from the books;" and the committee will add, that regard for the interest of their own medical officers, and a sense of justice to the profession generally, will induce them vigilantly to protect the institution against the extension of its benefits to improper persons. If among the free members there are any whose circumstances do not entitle them to its aid, they have unavoidably been admitted in the clubs, but in such a case the benefits are only extended to the club member, and not to any of his family. These clubs form, in the opinion of

the committee, a valuable testimony in favour of the utility of this dispensary, for they find by subscribing, that they enable their members to apply for medical advice in the earliest stages of sickness ; that they economise their funds by thus shortening the period of illness ; and consequently that they lessen the applications for weekly pay. These results are alone sufficient to recommend the institution, but when in addition to thus saving much of the time and suffering of the labouring classes, it is considered that a subscription of one guinea relieves the medical wants of twenty-one persons for the whole year, whereas other dispensaries only relieve for the same sum four persons for six weeks each, it will be allowed that the principles of this institution, in a medical and financial, as well as in a far more important, a moral view, rise much above any simple gratuitous charity, and that it is well entitled to claim not only liberal but general support.

The free Members' Fund.

Dr. paid	£.	s.	d.
Medicines.....	112	12	0
Dispenser's salary, half a year	20	0	0
Mr. Nankivell, Surgeon.....	134	0	0
Mr. Bicknell, Surgeon	134	0	0
	£400 12 0		
Cr.	£.	s.	d.
Receipts from free members, to March			
25th, 1 year.....	400	12	0
	400 12 0		

The Honorary Fund.

Dr. paid	£.	s.	d.
Printing and Stationery	17	9	4
Coals	6	1	4
Candles	2	2	0
Rent.....	18	0	0
Poor and other rates	7	6	10
Clerk's salary	28	19	6
Dispenser's ditto, half-year	20	0	0
Boy's ditto, 18 weeks	3	0	0
Paper	2	15	8
Repairs to Surgical Instruments	0	13	10
Sundry payments	7	7	6
Ladies' Committee	3	0	0
	<hr/>		
	£116	16	0
Purchased 103 <i>l.</i> 4 <i>s.</i> 6 <i>d.</i> in 3½ Stock..	100	4	10
Power of Attorney for Dividends	1	3	0
Balance in hand	36	1	9
	<hr/>		
	£254	5	7
	<hr/>		
Cr.	£.	s.	d.
Balance in hand, March 25, 1833	109	3	0
Donations.....	36	3	0
Subscriptions	107	3	6
Dividend on 103 <i>l.</i> 4 <i>s.</i> 6 <i>d.</i> , 3½ per cent. stock, half-year	1	16	1
	<hr/>		
	£254	5	7
	<hr/>		

MEDICAL REPORT.

In presenting their report to the governors of this institution, the medical officers would particularly direct their attention to the peculiar advantages it affords in statistical researches, especially in the study of epidemics and the diseases of artisans. From the patient having the right of applying for advice in the earliest stage of sickness, and from there being no circumstances connected with the institution to deprive him of its benefit in his illness, however long its duration, every disease comes under the notice of the surgeon at its commencement, during its whole course, and in its termination; and, as the patient most frequently returns to the same medical man in every subsequent illness, any peculiarity of constitution, and, in the course of time, his general physical and moral condition, become known to his medical attendant. It is obvious that these advantages, and accurate notes of the age, residence, occupation, habits, and diseases of every member of the institution, together with corresponding meteorological observations, must tend to elucidate the causes of disease and the circumstances most conducive to health.

The following is the report of the past year:—

Patients attended from March 21, 1833, to March 25, 1834, 1668,—of these 515 were visited at their own homes.

Cured	1442
Relieved	44
Dead	20
Under treatment	110
Midwifery cases	52
	<hr/>
	1668
	<hr/>

It will be remembered that during the last year the influenza prevailed throughout this country, and in some parts with great mortality. The books of this institution contain the account of 420 cases of this epidemic, and but one death, which occurred in an old person labouring under a previous affection of the lungs. The medical officers feel justified in attributing this, as well as the low rate of mortality among the patients of the institution generally, in a great degree, to the facility it affords of procuring early medical assistance.

As at the former annual meetings there has been no particular notice of the diseases which have occurred among the free members of the dispensary, the medical officers have thought that it would be satisfactory to the governors of the institution to receive a general account of the number of patients attended since its commencement; and they have accordingly so arranged the different cases as to show the respective prevalence of each class of complaints.

The number of patients attended since the commencement of the institution, being about $2\frac{1}{2}$ years, is 5610.

Continued fever	373
Epidemic eruptive fever	434
Diseases of the brain and nervous system....	193
—— Heart and blood vessels	30
—— Pulmonary organs	906
—— Organs of digestion	1630
—— Eye and ear	310
—— Skin	169
—— Bones	8
Dropsical diseases	7
Glandular ditto	152
Rheumatic ditto	174
Accidents.....	123
Midwifery cases	118
Miscellaneous diseases	975
	<hr/>
	5610
	<hr/>

The total number of deaths is 69, and it is worthy of remark, as evincing the prevalence and fatality of the disease, that 30 of these were cases of pulmonary consumption.

The following is a list of the operations of importance which have been performed among the patients of the institution :—

- 1 Amputation of the leg
- 1 Amputation of the thigh
- 2 Operations for cataract
- 2 ——— Strangulated rupture
- 1 ——— Aneurism
- 1 ——— Double hare lip
- 1 ——— Sarcocelc

1 Operation for Hydrocele

Several for Fistula Lachrymalis

Several for the removal of various tumours ;
and others of minor importance.

All these operations were successful in their result, with the exception of the amputation of the thigh. The unfavourable termination of this case was evidently owing to the debilitated state of the patient, consequent upon severe and long-continued disease; and it is highly probable that, had he submitted to the operation when it was proposed to him, at an earlier period, the event would have been otherwise.

For operations of importance, and for many other cases, it is very desirable that there should be attached to this institution a small hospital, which would afford to the poor many advantages not to be obtained at their own habitations. The medical officers have long contemplated the recommendation to the governors of such an addition to their establishment as would supply this desideratum, but they are aware that the funds of the institution do not, at present, admit of any increase in its expenditure.

GREAT MISSENDEN BRANCH
TO THE
CHESHAM SELF-SUPPORTING DISPENSARY.
ESTABLISHED FEBRUARY, 1835.

ADDRESS TO THE LABOURING CLASSES.

The object of this institution is to supply medicines and medical advice, on the lowest possible terms, to those who can ill afford, especially in long illness, to pay the usual medical charges.

By paying a weekly sum of not more than one penny to this dispensary, you may be attended in sickness by your own doctor, and have whatever medicines you may want, without any additional expense ; unless you reside more than one mile from your medical attendant, in which case one shilling will be charged for every other journey : or, if you live out of the bounds of the parish, but within five miles of his residence, you will have to pay one shilling for every journey.

If you are above the age of fifteen, and wish to avail yourself of the advantages of the dispensary, you must pay one penny per week ; unless you are a member of the Chesham or Missenden benefit society,

or of any other on the same plan; and then your payment to the dispensary will be reduced to three-pence a month, or about three farthings a week!

If under fifteen, you must pay one half-penny. But in families where there are more than three children, all above that number may be admitted free of charge. Thus a father, mother, and all their children under fifteen years of age, may provide for the expenses of the longest illness, by a weekly payment of three-pence or three-pence half-penny!

N. B. This does not apply to families who are in circumstances to afford the full payment.

If at entrance you can bring a doctor's certificate of health, and pay a sum equal to six months' subscription, you will be entitled to medical attendance and medicine as soon as you fall ill. Or if you bring a certificate, and pay no entrance money, you will be entitled to benefit in three months.

But if you bring no certificate of health, you will not be entitled to benefit till you have paid twelve months' subscription.

All members are vaccinated free of charge.

Single trusses are supplied to members at two shillings and sixpence each.

Especial care is taken that the very best medicines shall be provided, and that every attention shall be paid to the members.

The committee will at all times be most ready to give any information, and to listen to any complaint

of a member; as their object is to make the dispensary as efficient and as satisfactory as possible to all parties.

The committee meet at Missenden for a few months, on every other Tuesday evening; and afterwards on the first Tuesday evening of every month, at the school room, at six o'clock.

The first meeting will be on Tuesday evening next, February 23.

EXTRACT FROM MR. SMITH'S LETTER

RESPECTING

JUVENILE ALLOTMENTS.

I will now speak of the boys' garden. To prevent disease* is of as much consequence as to cure it; and manual labour out of doors is not only the best preventative of disease, but is the best education you can give to a man, be he rich or poor. "God planted the first garden," and the pursuit is honourable. Most persons will allow the excellency of it as a means of giving physical strength, but they are not so much aware of its utility in teaching the "*results of actions.*" He who plants a garden, at the same time cultivates his own prospective feeling; and it is this same feeling that distinguishes the reasoning soul from the brutes that perish. Reading, writing, &c. are not the teachers of discretion and forethought—that a garden is,—and these are the attributes that constitute *manhood*. A good boy, or a good and learned man, working in a garden, is better and greater than one of the same degree who cannot work for an hour, even to save his life. Some of our common working people have no taste for gardens: when they have earned their wages, they had rather sit boozing in a public house, or loiter

* The former part of this letter relates to self-supporting dispensaries.

round a blacksmith's shop, than smell the fresh earth. This is easily obviated. Boys delight in a garden. Give them an opportunity of indulging their taste, by dividing an *acre of pleasant garden ground amongst ten of them*. Take a small rent, 6*d.* or 9*d.*, or 1*s.* a month for their portions, which will allow their landlords to present them with some superior seeds, a better rake, or some little matter that will keep them in good humour with him, themselves, and their pursuit. I have tried this plan for three years, and have gradually increased my number of boys. I have never known one willing to abandon his plot; and wherever they may settle, if they can procure a bit of ground, I am sure they would neatly cultivate it, though they might earn their bread principally by carpentering, or shoeing men or horses.

This plan requires no committee, no subscriptions, no consultations, no jealousy, no strife. There is scarcely a village, or small town in the kingdom, where the elements, viz., the land, the boys, and the resident country gentleman or country lady, could not be found; and I have no doubt, now that the example has been set at Ealing, in Middlesex, that in a few years a walk to the boys' allotments will be the favorite haunt of many a one, who will there learn how very easy it is to be quietly useful in a village; and that in a little friendly intercourse with boys from ten to eighteen years of age by their superiors, more will be planted than they may live to see reaped, but "their works shall follow them."

ON GARDEN VILLAGE SCHOOLS.

To the Editor of the Educational Magazine.

RESPECTED FRIEND,

From actual experiment, at Missenden and at Ealing, and other places, it has been clearly proved, not only that boys from eight to ten years of age, will cheerfully do the work of a garden during two or three hours per diem, but that both themselves and their parents are delighted with it. At Missenden, the boys receive three-pence per week each for their work, which is one penny per week over and above what they have to pay for their education; so that a sum of money is gradually accumulating for them till they leave school. It appears, however, that at Missenden, they have only one acre of land attached to the school. Now, I have long desired to find out a plan by which village day schools may be made to support themselves, without annual subscriptions, which cannot be got in country places; and I am quite confident that this may be done upon the profits which would arise from the culture of four or five acres of land, the labour to be done by the master and his boys. If the holder of allotments of land

(see the reports of the Labourer's Friend Society) can make a profit of 25*l.* a year per acre, including the value of his own labour, that being done by himself, I wish to know why a schoolmaster, assisted by his boys, cannot make a livelihood off four or five acre of good land attached to his school room : I am confident he could. The difficulty lies in obtaining masters who are acquainted with gardening, and who will devote themselves to the object fully : but I am sure such characters can be found ; and I am fully persuaded, were some such active men as D. Capper, of Misenenden, or Dr. Smith, of Southam, to undertake this experiment, it would succeed ; and we should then find the great obstacle in the way of general national education removed ; and every village which could furnish twenty or thirty boys, might have its day school, carried on independent of annual subscriptions ; and, while the master was getting a good livelihood, and instructing his scholars in letters, they would also be learning the useful art of gardening, instead of spending their time in birds'-nesting, poaching, pulling down hedges, dog-fighting, &c., as is too commonly their occupation in our country villages and hamlets.

Thine truly,

JOHN HULL.

ADDITIONAL STATEMENTS

ON THE SUBJECT

OF THE

RIVER SHANNON

TO THE

REPORTS PUBLISHED IN 1831.

BY THOMAS BERMINGHAM, Esq.

OF CARAMANA, KILCONNEL, COUNTY GALWAY, IRELAND.

London :

PRINTED BY S. W. FOSK, 11, PICCADILLY.

 c
1834.

A LETTER, &c.

*To the Hon. Members of the United Parliament,
on the subject of the River Shannon.*

IN 1831, when Parliament was engaged, exclusively, with the Reform Bill, I got some of the principal landed proprietors to meet at the Thatched House Tavern to consider the state of this River, and the means of improving the Navigation, and the taking of the waters off the adjoining lands: after repeated meetings (having obtained the best opinions within reach at the time,) the Marquis of Downshire in the chair, we determined to wait on Mr. Stanley, the then Secretary for Ireland, with our Report.

This Report, and documents on which it was founded, were published at my expense, by S. W. Fores, 41, Piccadilly; many Members of the House were supplied by me with copies. Mr. Stanley admitted the value of the suggestions in this Report, and allowed the Chairman of the Board of Works, Colonel Burgoyne, who was about to be appointed

to that situation, to accompany me along the line of the Shannon. We did so in the autumn of that year, and the consequence has been, that Mr. Rhodes, an Engineer of high eminence, has made a survey of the line from Limerick to Lough Allan, whilst Captain Mudge, R. N. was employed to survey from the mouth of the river to Limerick.

The able survey of Mr. Rhodes is accompanied with an estimate for executing the proposed improvements, amounting to £153,000. The survey made by Captain Mudge is, unfortunately, not accompanied by any estimate. It is most desirable that the estimated cost should be ascertained without delay of this essential part of the navigation.

So far back as 1794, there appears on the face of an old map, now in my possession, made by John Cowan, these memorandums :—

“ At the summer assizes, 1794, the High Sheriffs and Grand Juries of the counties of Roscommon, Mayo, Galway, Clare, Limerick, Kings, and Tipperary, resolved, that the completing of the navigation of the River Shannon, and the great rivers adjoining thereto, from Lough Allan to Limerick, would tend effectually to improve and open the home and foreign markets to the produce of more than two millions of acres of land in the heart of the kingdom; and that the execution of this great navigation will effectually advance the commerce, manufacture, agriculture, and population of this kingdom.”

SLIEVE NEREN MOUNTAIN.

“This mountain is situated on the east side of Lough Allan, nearly opposite Munterkenny Colliery, and is also pregnant with a very good kind of coal, similar to the above, which, by sinking, may be procured on as easy terms as those on the west side of the said Lough. Here are likewise iron ore in abundance, and several slate quarries.”

MUNTERKENNY COLLIERY.

“July 2, 1792—Two pits open; the one eight, the other fifteen yards deep—the vein of coal about two feet thick, the upper part of which being large, round coal, beds upon a small dusty kind—the former sold at the pit’s mouth at 8*s.* 8*d.* a ton, and the latter at 5*s.*”

“N. B.—These coals being very pleasant, are extremely good for families and smiths. Were the navigation complete to Lough Allan, the whole country down to Limerick may be supplied on easier terms than we purchase from English vessels.” Surely this statement should be sufficient, and that no more delay should be allowed to take place in the completing of so desirable a work. But further evidence has been obtained; Mr. Grantham has reported on the benefit of letting off the superfluous waters.

All the bog Reports are filled with statements as to the amount of bog and waste lands kept, from

various causes, unimproved, but principally by the action of the water of the River Shannon and its tributary streams. Mr. Rhodes' survey, however, is the best and most able that I have seen; and I have consulted professional men, who all approve of his plan of *weirs* at the Falls, to keep the water all through at a more even level, and preventing the washing away (at these Falls) of the bottom of the river, which extraordinary floods are constantly doing; but when stone weirs are once established, the water can have no effect in wearing away their surface—the effect of these weirs being the keeping the water in summer up to some defined height, and thereby preserving this valuable line of navigation. It is a great mistake to suppose lands very much benefited by water remaining fully six months on them; they would be much more benefited by irrigation for a short period of time, which would be the effect of Mr. Rhodes' recommended improvement.

To the labouring classes in England who (whether right or wrong, I will not now stop to enquire,) conceive that my countrymen, coming as they do (principally from the counties bordering on this river) to labour here, do them an injury by increasing the number of labourers in this market, here is an opportunity afforded of at once employing them at home, and permanently too, as the six millions seven hundred thousand acres, which the ten counties bordering on this river contain, will be more capable of culti-

vation, after the improvements are effected on this river, and consequently and naturally will absorb in those improvements and cultivation many labourers who now, having no employment in the dead season of the year at home, come over to a better market, which this country affords. But let us attend to the circumstances of this river.

Part of it was in the hands of the Limerick navigation, but now I find that portion is transferred to the Dublin and Liverpool Steam Company; part in the hands of the Grand Canal Company; and part in the hands of Government. There are two canals from the metropolis to this river; one, I believe the Royal, is fallen into the hands of Government—and one in the hands of the Grand Canal Company. There is but one canal uniting with this river on the western side, a distance of about ten or twelve miles, to Ballinasloe. This fact alone is a convincing proof that the present state of the river offers no advantages for communicating with it.

Nor can this be any matter of surprise, when the circumstances of the river, in its present neglected state, is considered. Hear what Lieut. John Tully states in his Report in the printed document before-mentioned:—

“He started with three boats from Killaloe, in June 1821, with about thirty tons each of wheat—*about two-thirds what they could have taken provided there was no want of water, or the navigation had*

been in good order—encountered some difficulties between Shannon Harbour and Athlone, such as *bad fords*, innumerable detached rocks lying in the very centre of the cut;—he got to Athlone, however, *after a long passage from the state of the river*;—on his arrival at Athlone the three boats (though only drawing three feet six inches) stuck fast in the canal; he had to lighten them considerably to get into Lough Rea; the steamer had to lighten also: at Lanesboro' his troubles only commenced. The canal is filling up fast, the very walls on its banks falling into it. He was obliged to haul out into the lake, to tranship, with great difficulty—and after six days' hard labour he got his boats to Drumsna, where he had to hire two boats to take forty tons out of the boat which was left behind at Lanesboro'; he had to hire a store for a few days at Richmond harbour: he thinks the Government or Directors-General should be called on to pay the expenses incurred. They had a drudge-boat at work last January, when the water was high, now they have none when the water is low, and it might be useful."

Mr. Rhodes details the difficulties his boat met with, with all the advantages of her being well manned: in page 31, in his second Report, printed by order of the House, 10th June, 1833, he says he met a vessel stuck in the canal, belonging to Mr. Farrell, of Cloondrah, bound to Killalloe. Here follows some account of the difficulties this vessel encountered,

which is more fully detailed in said Report; left Lough Allan the 29th July. The first place they were stopt at was Battle Bridge—*second time at Carrick, and obliged to unload some*; next stop at Curnacurea; stopt and had to unload at James Town. *She rubbed*, and was delayed by discharges at Rusky Bridge; between Rusky and Clondra obliged to unload, and employ a lighter at Cloneen; *could scarcely get through Clondra canal*; delayed at different places between Clondra and Lanesboro'; were three days unloading and loading at Lanesboro', and had to employ a boat to lighten; stopt at Lanesboro' twelve days with contrary winds; eight days at St. John's Castle, Lough Rea; thirteen days at Bannagher, waiting for the clerk of the quarry; eleven days, with contrary winds, at Lough Derg; they have just returned, 1st October, and had only 18s. per ton. The tonnage they had in was 26—and the crew, three men."

Colonel Burgoyne and myself can vouch to the accuracy of those statements from our own observation, and the difficulties we experienced on the voyage we took as before mentioned, with a view of seeing the exact state of the navigation.

Much of the difficulty those vessels experienced will be overcome by Mr. Rhodes' plan of steam-vessels; and although I will never consent to place the whole of the trade of this great river in the hands of any individual, or even in that of any company, I freely

admit, that the country is deeply indebted to the late Mr. Grantham, who introduced the first steam-boat on the Shannon; and to Mr. Williams, who has so spiritedly worked out a trade under such discouraging circumstances, and has so clearly and so forcibly brought forward the advantages to be derived from the navigation of this river by *steam-boats*.

Supposing, then, this river were put by Government in the state in which Mr. Rhodes recommends; also, to be made now a king's river, open to every trader, whether to Sligo, Galway, Limerick, or Dublin. A toll, as at present, of only 1s. per ton for a vessel traversing the whole length, would produce a considerable revenue, as goods and passengers could easily navigate the entire Shannon in a day and a half, instead of in about three weeks, the time it takes at present. I feel justified in stating, that the produce on the northern and western side of the river (supposing good roads made to good piers on the river) would come twenty miles, and the eastern and southern side a distance of fifteen to this navigation. Taking the entire length as estimated for by Mr. Rhodes,—one hundred and fifty miles from Lough Allan to Limerick,—you have an area of above three millions of acres, the produce for exportation from which will make its way to this river; but as many of these acres are at present barren (very much owing, however, to the neglected state of the river,) making allowance for these at present

unprofitable acres, and also for the consumption at home, I may reasonably count on the produce of one million of these acres making this river the means of getting to the best markets, from which they are at present shut out. In Mr. Holmes' Report, in the pamphlet alluded to, he states his opinion, that "there are two millions of acres within ten miles of the shore of this river, which ought to produce half a ton per acre stock and crop; he says, one-fourth of this would probably go to distant markets, and be carried on an average sixty miles on the navigation." I think the produce of one million of acres, when the improvements contemplated are executed, would go fifty miles on the river; assume half a ton the produce of the acre, we have the enormous quantity of five hundred thousand tons carried to the best markets,—and suppose a toll of one-third the present charge for traversing the whole line, or fourpence per ton, we shall have a revenue of £8,333, after this river was put in a proper state to keep up the works, and go to farther improvements on the river.

By Mr. Rhodes' plan, steam-boats could ply from Limerick to Lough Allan almost daily: this improvement, taken in conjunction with the great western railways, now just about to be commenced, will, no doubt, render Limerick an important port at which to ship Irish produce. These works, besides giving employment, tend to pacify the people; and by producing an

interchange of inhabitants, must tend to conciliate the countries more than any other measure that Government at the present moment could devise ; besides being of material advantage to both countries.

It appears that the Grand Canal Company have almost a complete monopoly of the trade of this river—they have the power of charging 1*s.* per ton for all vessels using that portion of the river under their control ; they remit this, I believe, altogether to the traders using their canal, but I do not know that they remit any part of the sum usually charged for carrying on this canal when they get the trader there—they admit that this Company gain SEVEN THOUSAND POUNDS a year from the Shannon trade. As, therefore, the ordinary charge for traversing the whole length of this canal is 10*s.* or 11*s.* a ton tollage, it is clear that the trade is limited to about fourteen thousand tons per annum, and they are said to have most of the trade of the Shannon ; besides, by keeping the river navigation in the dilapidated bad state of repair it is in, as will appear from Mr. Rhodes' Report and other statements, they, perhaps, have an increase of trade thereby on their canal, as the only good navigation exists there, except the Royal.

Commissioners should be appointed to watch over this line of navigation, to be chosen by the counties bordering on the river ; and in order that the navigation should never be impeded from any want of

Government funds, these counties should be empowered, and required, to make temporary advances, on certain conditions, to keep up the works.

But I am decidedly of opinion that Government should put this great line of navigation in a proper state, and then trust to a small sum as toll, which I have no doubt would be fully adequate to keep up the works and the current expenses.

It should be made imperative on the counties adjacent to the Shannon to make roads to this navigation, and perhaps to make the tributary rivers and the lakes navigable, somewhat upon the principle, I believe, of the Highland roads—half to be advanced by the Treasury, and the other half to be subscribed by individuals, and charged on the counties.

As a measure of police, this work will be worth some regiments of troops. The disturbed districts have been, in many instances, those bordering on this river and its tributaries: I instance more particularly the baronies of Longford, in Galway, and Garrycastle, in the King's County. One of the reasons urged before the Magistrates for placing the district of Longford under the coercion act lately was, that Garrycastle being already under that act, and lying on the opposite side of this river—as the bad, troublesome, characters were hunted from that side, they took refuge in the wild districts on the other; and thus it appeared the barony of Longford became infected,

and these characters found a ready asylum in this neglected district.

Let this work be undertaken by Government—let these very characters (now bad, wild, and disorderly) be set to work—the best policeman you can have will be the overseer of this work—employ these men by day, and you need not watch them at night—give them pieces of bargain-work—allow them good fair wages—discourage their drinking whiskey, encourage good beer—and take my word for it, the men of the barony of Longford, and of Garrycastle also, will want coercing as little as any other set of men in any other part of the kingdom.

In a little Tract, published by C. Richards, 100, St. Martin's Lane, Charing-cross, in 1833, as facts for the Labourers' Friend Society, being a short narrative of the home colonies of Castle Sampson and Iskerbane, established upon Lord Clonbrock's estates in the county of Roscommon, in Ireland—*by myself*.

It is therein shown how a turbulent, disorderly peasantry were converted into useful labourers, and are now becoming small and comfortable landholders, in consequence of a judicious expenditure *of time* and money, valuing both at ONE THOUSAND TWO HUNDRED AND ELEVEN POUNDS; that by this expenditure alone sixty families have been rendered *independent*—peace restored to a district that had been greatly agitated—and yet that the improvements

made with this expenditure are paying Lord Clonbrock fully six per cent. interest, on the capital thus laid out, by an increased rental, calculated on a liberal scale of lettings.

Am I not justified in my expectations, that if Government will pursue with the river Shannon the same line that Lord Clonbrock took with the estate in question, the same results will follow (his Lordship, observe, made the great leading drain through the estate); and that the consequence will be, and that very shortly, that the people of these disturbed baronies will become, like those of Castle Sampson, peaceable and industrious cultivators of land now almost useless?

The Irish have long been told that the intentions of the people of this country towards them are good—now is the time to show that they have not been deceived:—here is a practical measure coming before you, pass it, and it will be taken as an earnest of your good intentions; and Irishmen will then give credit to what has so often been told them by the friends to the connexion with this great empire—that it is the determination of England, as it is her interest, to assist in the improvements of Ireland.

THOMAS BERMINGHAM.

23, *Dover-street, Piccadilly.*

25th July, 1834.

APPENDIX.



THE FOLLOWING LITTLE TRACT, ENTITLED,

PROPOSALS

OF

THE AMERICAN STEAM-CARRIAGE COMPANY,

FOR THE CONSTRUCTION OF

LOCOMOTIVE ENGINES,

&c. &c.

Was sent from America to the Right Honourable Sir JOHN SINCLAIR, Bart., founder of the Board of Agriculture, and with his permission is annexed, by way of Appendix, to this publication, as containing some most important suggestions for the improvements and interests of Ireland, as well as the other divisions of the British Empire.—It is of peculiar importance to Ireland, as the Coal so strongly recommended by Colonel Long, under the name of the Anthracite Coal, is exactly the same as the Kilkenny Coal, which is found in not less than three counties bordering on the River Shannon

PROPOSALS, &c.

THE AMERICAN STEAM-CARRIAGE COMPANY OF PHILADELPHIA, take leave respectfully to announce to the public, and especially to rail-road companies in the United States, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other rail-way carriages, secured to Colonel S. H. LONG, of the United States engineers, by letters patent from the United States; and that they are prepared to receive and execute any orders for Locomotive Engines and Tenders with which they may be favoured, and engage to furnish the same on as favourable terms as engines of the same class can be procured from England.

Having made the necessary arrangements for prosecuting the construction of Steam-Carriages on an extensive scale, they pledge themselves to a punctual compliance with all their engagements in that line of business.

The engines and other carriages to be constructed by them, shall be executed in a workmanlike manner, and will be warranted to fulfil all the conditions realised by the best Locomotive Engines hitherto employed within the limits of the United States.

They have already in their possession patterns and other apparatus adapted to the construction of three classes of engines, viz.: four-ton, five-ton, and six-ton engines: and, on short notice, will be able to supply themselves with apparatus for engines of any other weight that may be required.

In addition to the guarantee already adverted to, in relation to the workmanship, efficiency and durability of the engines, their performance shall be at least as efficient with the use of anthracite coal for fuel, as other engines have been with that of bituminous coal, coke or pine wood. With anthracite coal, the quantity of water evaporated per hour, under a pressure of 90 pounds to the square inch, shall be at least 180 gallons for a four-ton engine, 220 gallons for a five-ton engine, and 260 gallons for a six-ton engine.

The crank-axle of the Pennsylvania Locomoter, being formed in three distinct parts, each of which is furnished with two substantial bearings, no injury

or hazard will be incurred from the breaking of a crank, save merely that done to the engine itself. In such an event, the body of the engine will still remain supported on its wheels, and the whole train will be allowed freely to progress on the road, as far as its momentum will carry it.

The performance of the engines, in other respects, shall be in accordance with the statements exhibited in the following tables :

TABLE I.

Performance of a four-ton engine on different grades, at different speeds, and with different loads.

State- ments.	Col. 1.	Col. 2.	Col. 3.	Col. 4.	Col. 5.	Col. 6.	Col. 7.	Col. 8.	Col. 9.	Col. 10.	Col. 11.
	Speed per hr.	Level.	5 feet per m.	10 feet per m.	15 feet per m.	20 feet per m.	25 feet per m.	30 feet per m.	35 feet per m.	40 feet per m.	45 feet per m.
No.	Miles.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1	Slow	60	49.4	42	36.6	32.4	29	26.4	24	22.4	20.6
2	5	30	24.7	21	18.3	16.2	14.5	13.2	12	11.2	10.3
3	10	28	23	19.6	17.1	15.1	13.5	12.3	11.2	10.4	9.6
4	15	25	20.6	17.5	15.3	13.5	12.1	11	10	9.3	8.6
5	20	20	16.5	14	12.2	10.8	9.7	8.8	8	7.4	6.9

TABLE II.

Performance of a five-ton engine on different grades, at different speeds, and with different loads.

State-ments.	Col. 1.	Col. 2.	Col. 3.	Col. 4.	Col. 5.	Col. 6.	Col. 7.	Col. 8.	Col. 9.	Col. 10.	Col. 11.
	Speed per hr.	Level.	5 feet per m.	10 feet per m.	15 feet per m.	20 feet per m.	25 feet per m.	30 feet per m.	35 feet per m.	40 feet per m.	45 feet per m.
No.	Miles.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1	Slow	76.8	63.2	54	46.8	41.6	37.2	28.8	31	27.6	26
2	5	38.4	31.6	27	23.4	20.8	18.6	16.9	15.5	13.8	13
3	10	35.8	29.5	25.2	21.9	19.4	17.4	15.8	14.4	12.9	12.2
4	15	32	26.4	22.5	19.6	17.3	15.5	14.1	12.9	11.9	10.7
5	20	25.6	21.1	18	15.6	13.8	12.4	11.3	10.3	9.5	8.5

TABLE III.
Performance of a six-ton engine on different grades, at different speeds, and with different loads.

State-ments.	Col. 1.	Col. 2.	Col. 3.	Col. 4.	Col. 5.	Col. 6.	Col. 7.	Col. 8.	Col. 9.	Col. 10.	Col. 11.
	Speed per hr.	Level.	5 feet per m.	10 feet per m.	15 feet per m.	20 feet per m.	25 feet per m.	30 feet per m.	35 feet per m.	40 feet per m.	45 feet per m.
No.	Miles.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1	Slow	96	79.2	67.4	58.6	52	46.6	42.2	38.6	35.6	32.8
2	5	48	39.6	33.7	29.3	26	23.3	21.1	19.3	17.8	16.4
3	10	44.8	36.9	31.5	27.4	24.2	21.7	19.7	18	16.6	15.3
4	15	40	33	28.1	24.4	21.6	19.4	17.6	16.1	14.8	13.7
5	20	32	26.4	22.5	19.6	17.3	15.5	14.1	12.9	11.9	11

EXPLANATIONS OF THE TABLES.



THE computations exhibited in the foregoing tables, relate to the performance of engines of different weight, and to various other circumstances, intimated in the titular heading of each table.

The vertical column, headed col. 1, exhibits the rate of speed in miles per hour for which the computations provide. The other columns, headed col. 2, to col. 11, inclusive, exhibit the grade of the road, ascending, in feet per mile, together with the gross load, expressed in tons and parts, that may be conveyed upward, at the various rates of speed presented in col. 1.

The statements are exhibited in series running from left to right, through all the columns of the tables, and are numbered from 1 to 5 on the left of each table. The different statements relate to the different rates of speed, exhibited in col. 1, varying from a speed of two to three miles per hour, which

is designated in the tables as "slow," to a speed of twenty miles per hour.

The steam pressure or elasticity contemplated in all the computations, is ninety pounds to the square inch; the effective force of which, in producing locomotion, at the lowest rates of speed, is estimated at $33\frac{1}{3}$ per cent. of that pressure.

The series of statements designated No. 1, in each of the tables, exhibit the effective performance as just mentioned, without regard to the condition of the road, with respect to the adhesion between the rails and the wheels of the engine. This performance can only be expected when the road is in a condition to afford the requisite adhesion. With the steam power here contemplated, the wheels will be liable to slip on the rails, when the latter are covered with mud, frost, or snow; but in the best state of the road, such a performance may be effected.

The other statements exhibit the efficiency of the three classes of engines, which may safely be counted on, in all states of the road and weather, frost and snow excepted; it being always understood that the road must be well made, and free from abrupt curvatures.

An inspection of the tables will show the loads that may be drawn on a level road, at different rates of speed, as also the loads that may be drawn upward on different acclivities, and at different rates of speed; and by traversing either table diagonally, the approximate load that may be drawn on a road of various grades, from a level to forty-five feet per mile, may be found: for example, let it be required to determine the load that may be drawn upward on a road, varying in its grades from a level to forty-five feet per mile, by an engine weighing five tons.

In Table No. II, statement No. 2, and col. 11, we have thirteen tons drawn upwards, at the rate of five miles per hour, on an ascent of forty-five feet per mile. In statement No. 3, and col. 10, of the same table, we have 12.9 tons, or about 13 tons, drawn at the rate of ten miles per hour, up an ascent of forty feet per mile. In statement No. 4, col. 9, we have the same load, at a speed of fifteen miles per hour, up an ascent of thirty-five feet per mile; and in statement No. 5, col. 6, we have a little more than thirteen tons, drawn at the rate of twenty miles per hour, up an ascent of twenty feet per mile. In the same table, we find, in statement No. 1, col. 11th, that

a five-ton engine, when the road is favourable, is able to draw, up an ascent of forty-five feet per mile, twenty-six tons; and it may be readily inferred, that it is able to draw upwards, on more moderate acclivities, the same load, at increased rates of speed.

By an inspection of Table III. it will appear, that a six-ton engine is able to draw upward, on a road ascending at the rate of forty-five feet per mile, a gross load of nearly thirty-three tons, at a slow speed; also, that with nearly the same load, viz. thirty-two tons, the engine is able to travel at a speed of twenty miles per hour on a level road.

It should, moreover, be remarked, that all the statements, except No. 1, of each table, are considerably within the limits authorised by the power of adhesion between the wheels and the rails, even in the worst state of the road, frost and snow excepted.

The American Steam-Carriage Company feel warranted in assuring the public, and especially those companies or individuals who may favour them with orders for Locomotive Engines, that the foregoing conditions shall be punctually complied with; and that the performance of their engines shall be equal to those exhibited in the tables herein contained.

The subjoined testimonials will explain more fully the character and performance of the engines which this company propose to build.

(Extract from the Journal of the Franklin Institute.)

THE PENNSYLVANIA LOCOMOTER.

PATENTS have been granted to Colonel Long, of the United States army, for "certain improvements in the construction of locomotive and other steam-engines," under the designation with which this article is headed. The numerous experiments which have been made by Colonel Long, with the view of perfecting, and satisfactorily testing the efficiency of his improvements, have been attended with great expense, and have led to the most satisfactory results.

In this communication it is intended to explain some of the more prominent objects of Colonel Long's improvements, and to conclude with a brief recital of some of the practical results accomplished by them.

1st. The successful application of anthracite coal as a fuel for locomotive engines, has been a leading object of the inventor. This object has been attained in the most satisfactory manner, by means of a furnace and boilers of a peculiar construction. The furnace is surrounded by water on all sides, in a manner similar to that adopted in the most approved English locomotive engines, but differs from the latter

in the manner of attaching the fire-box to the boilers, and in exposing a much larger comparative boiler surface to the direct action of the heat. The furnace is supplied with a grate of a peculiar construction, which may be made to oscillate at pleasure, on an axle provided for that purpose. By means of the movements thus communicated, the fuel may be speedily discharged from the fire-place, whenever occasion requires it; or may be shaken or agitated in such a manner as to prevent the coal from packing upon the grate-bars, and thereby obstructing the requisite draft into the flues and chimney.

In addition to the fire-box already mentioned, the boiler, or steam generator, consists of two or more cylindrical boilers placed horizontally and lengthwise of the engine. Each cylindrical boiler is furnished with tubular flues, passing longitudinally through that portion of the boiler situated in rear of the fire-place. The heated air, flame, &c. are admitted into these flues through a niche in the cylinder prepared for this purpose, and are conducted through them into a smoke-box and chimney, situated at the back end of the boiler.

In addition to the tubular flues just mentioned, there is a broad and sufficiently copious flue, situated beneath the cylindrical boilers, by means of which the heated air, &c. is brought into contact with the entire lower half, or exterior, of all the cylindrical boilers.

The very extensive boiler surface thus acquired and presented to the action of the heat, contributes to render the production of steam exceedingly copious, while the heat imparted by the fuel is almost entirely

absorbed in its production. Such is the efficiency of this arrangement, that in a boiler nine feet and eight inches long, with two cylindrical boilers, each twenty inches in diameter, embraced within that length, the whole weighing, inclusive of all the flues, three thousand pounds, two hundred gallons of water have been evaporated in an hour, under a pressure of ninety pounds to the square inch, and at the expense of two bushels of anthracite coal.

In order to facilitate the combustion, or rather the ignition of the coal, a slip-chimney has been introduced into the engine, by means of which the height of the chimney may be varied at pleasure, from fourteen to twenty feet.

Among the advantages expected to result from this method of constructing boilers, are the exposure of a much larger comparative surface to the action of the heat; a very great reduction of the quantity, or weight, of the water necessary to a minimum supply in the boilers; a similar reduction in the weight of the boilers, as also in the thickness of the metal of which they are composed; together with certain facilities hereafter to be noticed, for removing, renewing, and replacing the boilers, without deranging other parts of the engine.

2d. The steam is employed in the working cylinders in such a manner as will allow of its operating, not only by its absolute, but by its expansive force. This object is effected by means of certain adjustments in the steam-valve apparatus, by the aid of which the entrance of the steam into each of the working cylinders is intercepted, at about five-eighths of the

stroke of the piston. The advantages of such an arrangement are too obvious to require a particular designation. It is sufficient to remark, that by this means, three-fifths of the steam generated, are rendered quite as efficient as the whole would be without such an arrangement.

3d. The adoption of wooden wheels, bound with wrought iron, and of such a construction as will admit of tightening the tire, or otherwise repairing it, without materially affecting the relations between the centres and peripheries of the wheels.

It is obvious to any one acquainted with the nature of the materials employed in the construction of wheels, that the iron bands, or tires, of wooden wheels, will expand and contract by the ordinary changes in the temperature of any climate, in such a manner, and to such an extent, as will, sooner or later, render the tire loose upon the fellies. In the wheels of the Pennsylvania locomoter, such a defect is readily remedied by withdrawing the flange-tire and inserting thin iron wedges between the remaining tire and the fellies, without the hazard of producing eccentricity in the wheel.

4th. The construction and application of boxes or bearings for the wheels, or between the carriage frame and the axles, which not only serve as *steps* for the bearing journals of the axles, but as receptacles for the grease, oil, or unguent, necessary for their lubrication. The boxes are of the best hard brass, and are, moreover, adjusted to *bosses* attached to the axle in such a manner as to obviate the use of linchpins, or other apparatus, to confine the axles in their bearings.

5th. The construction of a carriage frame, in a manner to afford the requisite stiffness in the engine, without the necessity of firm and substantial attachments to the boiler, as a means of imparting this essential property to the engine.

It must be manifest to every one conversant with steam-engines, that the ordinary, or rather extraordinary strain produced in boilers by the expansive force of high steam, is all that they ought to be compelled to resist. If to this great strain, that attendant on the concussions of a heavy engine in rapid motion, be added, the liability to explosion is greatly increased, while at the same time, rents and fissures in the joinings of the boilers, of a character seriously to injure the engine, and impair its efficiency, are likely to occur.

The only remedy hitherto devised to correct this difficulty, has been found in increasing the thickness of the metal composing the boilers, which must of course add proportionately to the weight of the engine, without increasing its efficiency. The evil here adverted to, has been far more advantageously remedied in the Pennsylvania locomoter in the way just suggested, viz. by giving to the engine frame the requisite stiffness, without depending on attachments to the boiler for the attainment of this object.

The boilers, instead of being firmly connected with the frame, are merely suspended within it by the intervention of springs, whereby they are exempt from the violent shocks to which other parts of the engine are occasionally exposed. By means of this arrangement, also, the working parts of the engine are relieved from

the vibrations and other irregularities calculated to impair the efficiency, and injure those parts of the engine affected by such irregularities.

6th. Lightness in the construction of locomotive engines has been regarded as a leading object of this invention. This object, it is believed, has elicited far less attention from those concerned in rail-roads than it deserves, especially when viewed in connexion with rapid transportation. Strong objections have repeatedly been urged against the employment of light engines, on the ground of their not having sufficient adhesion to the rails, to prevent the wheels from slipping. In reply to such objections, it is proper to observe, that it is very seldom that a gross load weighing more than thirty tons, including passengers, baggage, and cars, is ever offered for rapid conveyance; and that an engine weighing only three tons, has sufficient adhesion to convey such a load, even on a road slightly ascending.

In view of the solidity and texture of the materials of which engines must be composed, it is confidently believed that the greatest economical speed for an engine weighing six tons, will not exceed fifteen miles an hour. It is as confidently believed that a greater speed, with an engine of the weight just mentioned, would be attended with serious injury not only to the engine itself, but to the rails and other parts of the road on which it travels. This being admitted, the inference is fair and conclusive, being grounded on the laws of motion, concussion, &c., by which the movements of heavy bodies are governed, that an engine weighing three tons only, and

moving at the rate of thirty miles per hour, will be attended with shocks equally severe, and, consequently, that the *wear and tear* of the engine, rails, &c., will be equal in both cases. Hence, if a speed of thirty miles per hour must be attained, the weight of the engine ought not to exceed three tons. This may be regarded by some, as a mere matter of assumption, yet facts may be adduced, of a character to corroborate and enforce such a conclusion.

Having given the foregoing explanations, touching the objects aimed at in the construction of the Pennsylvania locomoter, the writer will conclude his remarks for the present, by recording a few of the general results drawn from numerous and repeated trials of this engine, on the rail-road leading from Philadelphia to Germantown.

The extent of this road between the two places above mentioned, is six and a half miles. Its ascent from the depot, in Ninth street, to its termination in Germantown, is two hundred and seven feet, or a little more than thirty feet per mile. The steepest ascent, is at the rate of forty-five feet per mile, which occurs in a distance of about half a mile, in Germantown. The road is exceedingly crooked, and the evenness of its surface is much impaired by the settling of embankments, and the consequent derangement of the rail-tracts. The number of trips, outward and returning, performed by the engine, is about eighty; the whole of which were attended with similar results. In no instance has a trip been interrupted for want of sufficient steam; on the contrary, at almost every trip, the fire-door has been thrown open a part of the time,

in order to prevent the generation of more steam than could be used.

The only fuel employed was anthracite coal. The quantity consumed in running to Germantown and back again, did not exceed two bushels. The quantity of water evaporated under a pressure of eighty to ninety pounds per square inch, was about two hundred gallons per trip. The engine has repeatedly started with a fresh charge of coal in the furnace, and with a pressure of steam barely sufficient to put the train in motion, yet, on reaching a distance of three or four miles, on an ascending trip, while the train was moving at its greatest speed, the steam was generated in such profusion, as to force open both safety-valves at once.

The results that will now be noticed, all of which relate to ascending or outward trips only, are as follow, viz.

Three passenger-cars, with fifty passengers, were drawn the entire distance in twenty-eight minutes, including two stoppages on account of way passengers.

Three passenger-cars, with sixty-nine passengers, were drawn through the same distance in twenty-six minutes, including four stoppages as above.

Three passenger-cars, with one hundred and twenty-four passengers, were drawn, as above, in twenty-nine minutes, including three stoppages as before.

Two passenger-cars were drawn, as above, in nineteen minutes, the number of passengers being forty.

To these may be added the three following trials, with burden-cars :

A gross load of eleven and a half tons, was conveyed to Germantown in twenty-six minutes.

Six burden-cars, each weighing $28\frac{1}{4}$ cwt., three of the cars being loaded with stones, gross load, by estimate, twenty-five tons, were conveyed upward on the steepest and most crooked part of the road, the ascent on a part of the distance being at the rate of forty-five feet per mile, at a speed, as nearly as the engineer could judge, of at least twelve miles per hour.

Seven burden-cars, weight as above, two of them loaded with stone, one having about half a ton of iron on board (several workmen rode on the cars), gross load estimated at twenty-five tons, ascended to Germantown in twenty-nine minutes.

On the 4th of July, six trips were made, each with three cars attached. Average time of ascent twenty-five minutes; average number of passengers conveyed, between sixty and seventy.

By a fair comparison with the results of other engines plying on the same road, and propelled by the use of pine wood for fuel,—the cost of coal required to perform a given service, does not exceed one-half that of pine wood for a similar performance,—less than two bushels of the former being of equal efficiency with one-fourth of a cord of the latter.

There is still another consideration which entitles anthracite coal to a decided preference before pine wood, or any other fuel employed in locomotive en-

gines, which is that, in the use of the former, passengers are entirely exempt from the annoyance of smoke, sparks, cinders, &c., which are produced and thrown out in great profusion when other kinds of fuel are employed.

(*From the Daily Chronicle.*)

The locomotive engine, called the Pennsylvania, invented and patented by Colonel S. H. Long, of the United States army, has been fairly tried and approved on the Germantown rail-road.

Recent experiments have shown that the engine is fit to draw thirty-two tons, easily, on a level road, at the speed of fifteen miles an hour.

The whole weight of the engine is four tons and a half; the boilers evaporate two hundred gallons in an hour, in which time they require the consumption of something less than two bushels of anthracite coal, the only fuel used.

The wheels are made of wood, each with an iron tire of three parallel, concentric, circular bands, cheap in price, but very substantial, strong, lasting, and efficient.

Colonel Long has employed himself, for some time past, on experiments for the application of the heat produced by *anthracite coal* to the production of steam for locomotive engines, and has succeeded in a degree above the most sanguine expectations with which he started. With his arrangement of the

furnace and the flue, anthracite coal may be used for raising steam, *more advantageously than the best pine wood*. It sends forth no sparks to burn or alarm passengers careful of their dresses; and emits no disagreeable or pernicious vapour; *and it enables the director to travel without the incumbrance of a tender, as the fuel and the water are both carried on the engine.*

(From the United States Gazette.)

Colonel Long's engine is now in successful operation on the Philadelphia, Germantown, and Norristown rail-road. Colonel Long deserves great credit for the genius, patience, and unremitting perseverance which he has displayed in bringing into operation this beautiful machine. Its principal merits consist in its light weight, and the consumption, as fuel, of *our anthracite coal*. The engine weighs four tons and three quarters with her fuel and water, carrying no tender, as her water-tanks are on the top of the machine. *Colonel Long has been for a considerable time experimenting on the subject of the use of anthracite coal for fuel, and has met with repeated failures and disappointments.*

This enterprising gentleman, however, not discouraged by these circumstances, persevered, and has at last realised *the complete success of this valuable improvement, which not only obviates the emission of sparks and smoke, but establishes a most economical, and, therefore, highly valuable improvement.* We

advise our citizens to examine it. The company deserve credit for the facilities which they have afforded for the development of the invention.

Applications for engines, and all other communications in reference to the subject, will be forwarded to the address of the subscriber in the city of Philadelphia.

By order of the Company,

WILLIAM NORRIS, Secretary.

November 1833.

I have thought it of vast importance to Ireland to give Colonel Long's experiments on Anthracite Coal for steam-engines, as immense quantities of this same kind of coal is raised in the South of Ireland, called the Kilkenny Coal. Should it become generally used for engines, it will induce a trade to a considerable extent, and one which will be of great importance to the Canal and River Shannon navigation.

It is hoped that some of the experiments made by Colonel Long may prove useful to us at home; and the dreadful accident which occurred lately, by the coming off of the wheel from one of the steam-carriages, makes me entertain a hope, that the adoption of Colonel Long's crank-axletree, as detailed in page 20, may prevent such accidents in future.

THOMAS BERMINGHAM.

23, *Dover-street, Piccadilly,*
4th August, 1834.

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