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*Edelkoo*

ESSAY  
ON  
FIORIN GRASS;

SHewing

The Circumstances under which it may be found

*IN ALL PARTS OF ENGLAND,*

ITS EXTRAORDINARY PROPERTIES, AND GREAT UTILITY

TO THE

PRACTICAL FARMER;

TENDING TO PROVE

THAT AS, UNLIKE ALL OTHER GRASSES,

IT ENDURES WITHOUT INJURY,

THE EXTREMES OF HEAT AND COLD, WET AND DROUGHT,

AND IS INDIFFERENT TO

DEPTH OR RICHNESS OF SOIL,

It is admirably adapted for Cultivation in  
YOUNG PLANTATIONS AND WASTE LANDS.

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By WILLIAM RICHARDSON, D.D.

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LONDON:

PRINTED BY WILLIAM PHILLIPS,  
GEORGE YARD, LOMBARD STREET.

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1810.

THE  
SOUTHAMPTON  
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## DEDICATION.

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To G. B. GREENOUGH, Esq. M. P.

SIR,

I had the pleasure of your company at Portrush, and that of our common friend Mr. DAVY, when I discovered that the stolons or strings of FIORIN GRASS (hitherto unnoticed) composed a great part of our hay crops in that harsh climate.

I discovered also, and satisfied you, that the high verdure displayed by all the steep precipices about the GIANT'S CAUSEWAY (not-

withstanding their scanty soil, and bleak northern exposure), was derived from Fiorin Grass, which almost exclusively covered them.

The important conclusions deducible from these and other FACTS, discovered about the same time, induced our friend Mr. Davy, to encourage me to lay them before the public.

I consented, upon the condition that the Memoir on Fiorin Grass might be addressed to *him*, and that *he* should present it to the BOARD of AGRICULTURE.

To the stock of information I then had upon the subject, many important additions have been since made.

I have laid these successively before the public; and as many of the facts and properties I stated were extraordinary, and even paradoxical, I have excited much incredulity.

Aware that it was necessary to have credit for my positions, before my discoveries

would be practically made use of, I endeavoured to establish them in the best manner I could.

In the winter of 1808, I requested friends of high rank and respectability, to inspect my Fiorin Crops, and to report upon them, which was done.

This present winter, as my culture of this invaluable grass had increased, and my Fiorin Crops were prodigiously enlarged, I adopted the same measure.

Fortunately a similar stile of inspection has been very lately taken up, through a channel which will probably be deemed more impartial.

A respectable and venerable stranger, PATRICK MILLER, Esq. of DUMFRIES-SHIRE, has, at considerable expence, sent from SCOTLAND a most intelligent gentleman, to examine my proceedings, and to report upon them; this Report, I understand, will be made public, and I hope will satisfy the world.

I shall now put an end to my Fiorin Communications ; and having, in various Essays, shewn generally, how this curious grass was to be cultivated ; and how its various, and even contradictory properties were to be applied to the most important uses : having also, at the request of two noblemen high in rank, addressed Memoirs to each of them, on the subject of reclaiming the unproductive parts of their respective countries. Shewing to *the one*, how I conceived the heathy hills and mountains of the HIGHLANDS OF SCOTLAND might be clothed with Fiorin, and made highly valuable. To *the other*, how the widely extended and dreary bogs of IRELAND, might be made productive, by the introduction of the same grass. And having, at the request of another most respectable friend, speculated on the great probability there was, that Fiorin grass would afford a plentiful and nutritious food to our WEST INDIA cattle, at present a great desideratum ; I shall now conclude (and, with your permission, through you),

by teaching your countrymen how to find Fiorin Grass for propagation and cultivation, in all parts of ENGLAND. And, also, by shewing how little credit is to be given to those agricultural writers, who discourage mankind from applying this inestimable gift of nature to use. Leaving them to account for their having overlooked the value of a grass, with whose other properties, it appears from their own writings, they were well acquainted.

Permit me now, Sir, to make my acknowledgment to you, for the many kind attentions I have received from you; and, also, to MR. DAVY, for the favour he did me, when he introduced me to your acquaintance: an obligation of which I shall always retain a most grateful remembrance.

I am, Sir,  
 your sincere friend,  
 and humble servant,

WM. RICHARDSON.

Clonfeele, Moy,  
 January 19, 1810.

The first of these is the fact that the  
 world has become more and more  
 a single community. The nations  
 are no longer isolated islands, but  
 are now all part of a single  
 world. The progress of science and  
 industry has made it possible for  
 the products of one country to be  
 sold in another, and for the  
 people of one country to be  
 acquainted with the people of  
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 feeling of sympathy and  
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ESSAY  
ON  
FIORIN GRASS, &c.

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THE pains I have taken to make the world acquainted with FIORIN GRASS, by the numerous Essays I have published on the subject of this extraordinary and invaluable vegetable, have already brought much notice upon it.

Nor is it extraordinary that attention should be excited by the discovery of a grass, which I have proved, by numerous and respectable testimonies, to produce hay preferred by cattle to all other, and nearly treble the quantity afforded by any other grass: and also, that this enormous produce is not the exhausting effort of a single year; but the regular and continued crop to be expected: for the meadow which

in 1808 yielded above 16,000 pounds weight in 1809 increased by a trifle, and another meadow in 1809, produced above 18,000 pounds of choice hay to the *English acre*.

The value of this grass is not limited to its hay alone; for I observed very early, that by reserving a portion for the purpose, I secured a most abundant supply, of what is admitted to be a grand desideratum in the domestic part of Rural Œconomy,  
WINTER GREEN-FOOD.

This pleasant property of Fiorin Grass is still better established than the preceding ones, for it is not only confirmed by the same testimony, but it also lies open to ocular demonstration, as I have repeatedly held out, giving public notice every winter, since I discovered it, that my milch cows should be always found living on this succulent provender from *December* until late in *April*.

Many have had the curiosity to ascertain the truth of this curious fact, and were sur-

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prised at the facility with which this luxuriant food was procured, in such quantity, in so untoward a season.

These important properties of this newly discovered grass, were regularly communicated to the public, and generally accompanied with an invitation to all amateurs in reach, to come and witness the success with which I was cultivating this extraordinary plant;—the very different soils in which it would thrive well;—and the important uses to which its luxuriance might be applied.

I always concluded with an offer of transmitting Fiorin *roots, strings, and seed*, together with instruction on the subject, to all strangers that should apply to me.

Both these challenges have been accepted; many amateurs have called upon me; several of them have given strong testimony in support of the facts I had stated, and not one of them left me in doubt.

The applications made to me from a distance, for Fiorin roots and strings, have been numerous; and, of late, so frequent, that I am unable to sustain the weight of the correspondence they have brought upon me any longer.

As yet I have not left a single letter unanswered; and I have the satisfaction of knowing, that, by my transmissals, this valuable grass is already under cultivation in many places, both in England and Scotland.

The majority of those to whom I sent roots and strings, have announced to me the great success of the experiments they had made; with their astonishment at the luxuriance which their Fiorin already exhibits, and the extent to which they are now able to propagate, from the strings, I transmitted to them by common course of post.

Obliged, at length, to contract my scale, and confine my correspondence to those whom I have already engaged in Fiorin culture, I feel myself under the necessity

of informing the public, how those, who wish to avail themselves of my discovery, may, without calling upon me, find Fiorin roots and strings for themselves to any amount, every where about them.

I have, on other occasions, established the *universality* of this grass; and even *sustained* that there was not a square perch in the United Kingdoms, which did not contain spontaneous Fiorin; and thence, by an induction not overstrained, that there was not one square perch in the same bounds, that might not be clothed with it, that is reclaimed.

At present, I have nothing to do with these wild speculations: my sole object, *now*, is to shew, how every person may procure Fiorin for himself, by pointing out the places where it ought to be found; and where I never failed to find it myself.

I shall, therefore, take up the question *à priori*; and, from the natural history and habits of this grass, shew what are the places in which it ought to be found.

That nature abhors a naked surface we all know; and that, whenever a part is laid bare, by any means, she hastens to clothe it by spontaneous vegetation, without requiring the interference of man.

I have stated in a Memoir, published in the Transactions of the Royal Irish Academy, that of the grassy tribe, the most prompt in taking possession of naked ground, are the *agrostis Stolontifera* (Fiorin) the *Poa trivialis*, (Rough-stalked Meadow Grass,) and the *Poa Annuæ*, (Annual Meadow Grass.)

This position of mine, so far as relates to this grass, is confirmed by a letter I received lately from a noble correspondent, well acquainted with Fiorin; who informs me, that he had the day before pointed out to those about him, on the Newmarket race course, a Fiorin plant, just beginning to occupy a bare place, whence a sod had been raised for some local purpose.

Though this grass be the first to occupy, and although its vegetation be uninterrupted, yet it is soon outstripped by its

competitors, whose paroxysm of summer vegetation being more rapid, enables them to assume the predominance; which the Fiorin, though it preserves its existence, is never able to deprive them of, unless some circumstance occurs injurious to its rivals, and favourable, or at least innocent, in respect to Fiorin.

Hence we are led to inquire, what are the properties of this grass likely to be of importance in its contests for possession; these will lead us to the scenes where we shall find it predominant, when alone it can be of use to us.

First, Fiorin has scarcely any root, the slightest catch of the ground being sufficient for its existence and nourishment; but its competitors have all large bushy roots; hence, in loose rich ground, the contest is most unequal, the numerous fibres of the other grasses occupying the whole place.

Fiorin is amphibious; and perfectly indifferent to the extremes of wet and drought, so far as its existence is con-

cerned, though its luxuriance may be affected by them.

Fiorin is equally indifferent as to elevations; being found in health at all altitudes.

Perfectly insensible to the severities of cold; and probably of heat also, as it is well known, and of great value, in India.

These properties, severally, will assist much in directing us; but it is the indifference of Fiorin to *privations*, that will be found the best clue to guide us in our searches after this curious grass.

Other vegetables delight in the rays of the sun, and pine or die when deprived of them; a free circulation of air is necessary to most plants, and simple shade is often as fatal to them, as if it were poisonous.

Not so the Fiorin, which can bear great privations both of air and sun; but to what exact extent I have not tried.

Such are, in general, the habits and properties of this grass; which will assist our neighbours in Great Britain, in their search

for a vegetable hitherto uncultivated in their island: and for which, of course, they must search the wilds of Nature; unless they happen to be acquainted with some of those to whom I have transmitted Fiorin strings, who, being now in stock, are able to supply their neighbours.

Let us now consider the surface of our land as a vast field of battle, over the whole face of which an host of vegetables are in action, contending for the possession.

The question before us is: where, in this wide scene of contest, may we expect to find our favourite grass victorious, having acquired the possession, or even the predominance; it is there we must go to look for its roots and strings, when we are proceeding to lay down our grounds.

Not in the open uniform sole, where all the competitors are on an equal footing: in such situations, though this grass always exists in abundance, yet it is in some sort *dormant*, and with difficulty discovered by its amateurs.

It is in situations where hardships or privations occur, that we may expect to see our grass rising above its competitors; such check the efforts of its rivals, abate their powers, and enable the Fiorin to contend on vantage ground.

In such situations we are sure to find this grass, in an abundance proportioned to the severity of the privations; to which the contending vegetables are equally exposed, but not equally able to sustain.

To determine these situations *à priori*, we must refer to the privations I have enumerated, to which Fiorin is indifferent, but which prove fatal, or at least injurious to its competitors.

Of these, the three of the greatest importance are,—extreme scarcity of soil for their roots;—loss of the sun's rays;—and want of free circulation of air.

Let, then, those, who wish to cultivate Fiorin grass, and are at a loss for roots and strings, search the places subject to these privations, and they will soon find the grass

they seek for, predominant; perhaps in exclusive possession, and ready to afford materials for propagation to any amount.

I shall enumerate a few of these places, and take the liberty of mentioning the names of some highly respectable persons, who found spontaneous Fiorin in different parts of ENGLAND, in the very places I pointed out.

But before I proceed to shew where Fiorin will *probably*, or rather *certainly*, be found, it is necessary to put the public on their guard, upon the subject of the prejudices which have been so industriously raised against this grass; for it would be vain to point out where it was to be found, while credit is given to those who publish that it is not worth looking for.

How it comes that such indefatigable exertions are made to stifle this valuable gift of Nature in its birth, and to prevent agriculturists from even forming an acquaintance with it, is not my business to inquire.

I lament to see, that the enemies of Fiorin are of no common rank in the field of agricultural learning; authors of treatises in great circulation; published avowedly for the instruction of their uninformed countrymen, each of them with the feelings of VIRGIL;

*Ignarosque vix mecum miseratus Agrestes,  
Ingredere,.....*

Incited by such benevolent intentions, it is with astonishment I find these gentlemen pronouncing *professoria lingua*, the most decided condemnations of this grass; such as *Agrostis stolonifera* (our Fiorin) "is the worst of all grasses!"

"All sorts of stock will starve rather than touch its herbage."

And not content with positive abuse, they give it opprobrious names; such as "*black squitch, couchbent, red robin,*" &c, as if they feared the more serious reprobation of their enemy might not reach all ranks.

It is natural to suppose, that these gen-

tlemen must have been ignorant of the vegetable upon which they wage such unrelenting war. By no means: it appears that they were just as well acquainted with all the circumstances attending this grass, as I am: its natural history; its habits; its characteristic marks were well known to them: nothing escaped them but its value!

Now as the object of these gentlemen is precisely the same with my own, namely, to give information on agricultural subjects that may lead to useful practice; I hope they will not take it amiss, that I discuss this *solitary* point of difference between us; fairly stating, in their own words, what they alledge against Fiorin.

The world will then have materials before them, by which they may be determined,—whether they will reject, with abhorrence the *agróstis stolonifera*, (Fiorin) as these gentlemen say their cattle do: or whether they will adopt the cultivation of grass, which they are told, *by me*, will be found of greater importance, and of more diversified

use, than all the rest of the grassy tribe taken together.

I commence with MR. DAVIS, who, in his General View of the *Agriculture of WILTSHIRE*, states:—

“ The *agrostis stolonifera* is one of the worst grasses, in its native state, that the kingdom produces; and the peculiar plague of the farmers, in the south-east district of WILTSHIRE.—

“ It is of that coarse nature, that no cattle will eat it.”

MR. DON, in the Transactions of the Highland Society (vol. III. p. 200), dreads lest under the recommendation of old STILLINGFLEET, any *agrostis* should be cultivated.

STILLINGFLEET had praised the *agrostis capillaris* (Dwarf Bent).

MR. DON tells us, “ he must have meant the *agrostis vulgaris*, and is under a great

mistake ; as that agrostis is known to be one of the worst of grasses :

“ The abundance of its flowering stems, is a proof that it is disliked, or rejected by cattle.”

“ Every farmer knows that it is the worst of pasture, or rather no pasture.”

Again, Mr. DON (in page 220) classes Fiorin (under its own name, *agrostis stolonifera*) among the grasses not eligible for cultivation ; and proceeds :—

“ There is no species of agrostis that cattle are fond of, and as they are generally avoided by cattle, there is no reason to believe that any of them would answer as hay ; besides, there is no grass, not even the *triticum repens*, (Couch Grass) so difficult to eradicate.”

MR. SMITH, roused, perhaps, when he read of this difficulty, made (as we are told in the ANNALS OF AGRICULTURE) an experiment (for which he obtains due credit), and at the expence of 80 load of chalk per acre, overpowered this intruder (the *red Robin*), which, by neglect, had over-run his grounds to a great degree; and he too tells us, "that any sort of stock would starve rather than touch the herbage."

I am now to shew that these decided reprobations of this plant, do not proceed from *mistake* or *ignorance*; for each of the gentlemen, separately, shews he is perfectly well acquainted with it.

I shall commence with MR. DAVIS, and as my chief object in this Essay, is to shew strangers how to distinguish, as well as where to find Fiorin, I shall take the liberty of borrowing Mr. Davis's description of it; certain I could not give one more correct: indeed it is reasonable to suppose that this gentleman should be best acquainted with

his own country (WILTSHIRE) grass. He says:—

“ It produces succulent shoots which fall down, and taking root at the joints shoot out, and drop down and shoot out again ; so that the stalk is frequently eight or ten feet in length, from the original roots : and though the crop is exceedingly thick on the ground, it is, perhaps, not eighteen inches high.”

Mr. Davis proceeds:—

“ It is almost the only grass common to water meadows, that will stand *wet* and *dry* ; for though it will live and flourish most when under water, yet no dry weather will kill it.”

“ It forms a thick tough rug over the land.”

Mr. Davis's description of Fiorin is most correct.

Mr. Smith says:—

“ His field had run to red Robin (*agrostis stolonifera*) to such a degree, that to walk over it was like treading on a cushion.”

The observation generally made on my own meadow,

Mr. Don also describes it well; he says:—

“ In every neglected field in hilly ground, this *agrostis* may be seen a foot high or more, matting the surface.”

It is amusing to observe how near these gentlemen approach to the discovery of its value; which, however, still escapes them. I begin to think I have got upon my old geometrical ground: perpetual approximation without a possibility of reaching.

Mr. Davis states a property of this grass highly valuable, had he known how to avail himself of it; he says:—

“ This tough rug preserves itself, and kills every thing else.”

A happy circumstance, to which we owe the power of continuing *exclusive* crops of Fiorin; a point which ingenuity cannot carry with any other grass.

Mr. Davis proceeds:—

“ But in these meadows, when abundantly fed with water, it is of a juicy, succulent, nourishing quality, as grass, and makes the most desirable hay in the district.”

Mr. Smith had encouragement to try a little farther, when he found that

“ A young spring of grass appeared through the chalk, which his sheep ate freely. Upon examination,

he found the young shoot not to be any other grass but actually the red Robin itself."

Mr. Don, it appears, has already got some hints on the subject, which he treats with much seeming contempt; he says:—

"Some gentlemen of considerable observation and experience, have thought that the *agrostis* was an eligible plant for cultivation; and that it makes good hay. But to this, I am persuaded, no practical farmer would agree."

He says, in another place:—

"A stranger is often astonished, at the apparent luxuriance of this useless grass."

And then, without a thought of trying whether this luxuriance could be turned to

any useful purpose, he sits down in despair, and utters an ejaculation :—

“ How much then must it interest the cultivator of such a soil, to discover a grass that might thrive as well as this; and, at the same time, afford nutritious food for his cattle.”

There seems to have been a curious controversy, between nature and these agricultural writers: the *former* obtruding this inestimable grass upon us, in every possible way; so that those who are now acquainted with Fiorin, look back with astonishment at their own blindness, in suffering its merits so long to have escaped them :

While the writers on the subject of grass seem to have entered into a combination, to thunder anathemas against this agrostis; yet, at the time, there was not a single person troubling themselves about it.

They all shew us they had seen this grass in the state of its highest perfection, cover-

ing the surface with a thick, luxuriant, and verdant fleece, when they saw, that in this form (what Mr. Davis must mean by its native) cattle neglected it, the gentlemen without attempting any experiment, sat down and abused it.

They never considered that nature had not endowed the graminivorous tribe with canine teeth, to enable them to tear to pieces a *rug*, a *mat*, or a *cushion*: it never occurred to them to try whether this fleece, inaccessible to them in its present form, might not be agreeable to them when severed; a fact—which Mr. *Davis* knew, which Mr. Don had been told; and which I myself had communicated to Mr. Smith, of Eastling, a year before, through his friend, Mr. Arthur Young.

An handful of this grass, cut and offered to their cattle, would soon have settled the point.

MR. DON, rather than take the trouble of trying what he was told would answer, prefers throwing the blame elsewhere, and

bursts into his ejaculation, to the following purport:—

“ Improvident Nature ! could you not, to enrich the Agriculturist, have endowed some other grass, capable of affording nutritious food for our cattle, with that enviable luxuriance so provokingly displayed by this useless grass.”

Having dwelled so much on this *rug*, this *mat*, this *cushion*, I may have excited some curiosity on its subject ; to satisfy which, I promise, that while I live, I shall, from September, when it forms, until late in April, always preserve some portions of this *Fiorin fleece* (with so many names) for inspection.

I hope the gentlemen, who have taken so much pains to discourage their readers from attempting to cultivate the *agrostis stolonifera*, will recollect, that their books have been published for the avowed purpose of

instructing the world ; of course, that they are answerable (in foro conscientiaë) for the errors they disseminate.

They, like many writers, who copy from their predecessors, may have been led into a mistake, which, so soon as discovered, they are bound in honour to rectify.

Their papers are all of very late publication ; nearly coeval with those which hold out such encouragement to the cultivation of the very same grass.

The question cannot rest here ; the agricultural world must no longer be embarrassed, by such direct contradictions.

The gentlemen, upon whose positions I have dwelled so long, must revise their observations upon the grasses they have cultivated ; and either candidly admit their errors, in respect of the *agrostis stolonifera*, or openly defend their positions on the subject, and with the same confidence that they pronounced them, when they did not expect contradiction.

There are many others less scientific, but

equally inveterate, who persist in affirming Fiorin to be *squitch grass*.

No doubt these grasses both produce long strings with green sprouts issuing at intervals, and at right angles from each, and thence have a resemblance; but a moment's attention soon discovers the difference.

The *squitch* string is pure *root*, and never of itself reaches the surface, nor is seen, except when disturbed by the tool of the farmer.

The string (*or stolo*) of the Fiorin, is a production of the surface, and would rise erect, were it able to sustain its own weight; and, like a creeper, it actually does rise, whenever it can catch support.

The *squitch* string (being *root*) is quite solid; while the Fiorin string is tubular.

The *squitch* string is always white; the Fiorin is green in summer, whitens only in winter: even then the whiteness is confined to the envelope. The interior tube is always green.

In the *squitch* string, the small radicals

form rings round the great root; while in the Fiorin string, two or three small fibres issue from the lower side of the joint only.

As these grasses approach their inflorescence, their panicles are so unlike as to preclude all mistake.

Having now, as I hope, cleared up the errors into which many have fallen, respecting the *agrostis stolonifera* (Fiorin), I shall proceed to state the places where we shall certainly find it, guided by the privations which we know it is able to sustain, but under which its competitors pine or die.

## THE FIRST PRIVATION,

THAT of sufficient soil for the roots, leads us to the paved or gravelled high roads, which, by means of new cuts, cease to be used; we find on these, notwithstanding the scanty covering, that the Fiorin has always taken possession; and when such roads become green (as they invariably do when no longer travelled upon), we find that Fiorin is the exclusive, or at least the predominant grass.

I particularly refer to the old RANDALSTOWN turnpike road, which I long travelled on while a wretched pavement. It is now enclosed in my friend EARL O'NEILE's demesne; and I shewed his lordship, that whenever he chose to cultivate Fiorin, that old road would furnish him with an inexhaustible stock of roots and strings.

I refer also to the private road, made by the MARQUIS OF ABERCORN to his turf bog,

on a contiguous mountain. This road was travelled upon only when the turf was coming home; and as a *Cul de sac*, the upper part never touched; here too, the Fiorin had the advantage of greater elevation than many of its competitors could bear; the consequence was, that this grass predominant in all, had taken exclusive possession of the upper part of the road; and I pointed out (to his lordship's agent Mr. Burgoyne) the place, as an excellent nursery, that would supply whatever plants the marquis wanted, when he should execute his intention of laying down grounds with this grass.

I had the honour afterwards of a letter from his lordship, inclosing some Fiorin he had found in *neglected roads* in England.

The sides even of all our common roads abound with Fiorin, when the gravel extends beyond the part travelled on and beaten: in this shallow, hungry, but un-

disturbed stripe, the Fiorin soon establishes itself.

### THE SECOND PRIVATION,

THAT of the sun's rays, leads us to the north side of all walls, where the green sod comes close up to the wall; in such situations I invariably find, in this country, the Fiorin; shewing itself more and more as we approach the wall; and at the contact of the sod and wall, nearly the only grass.

This property affords us an excellent opportunity of ascertaining, whether Fiorin be universal in all parts of the united kingdom.

Our church-yards are protected from abuse by cattle, the green sod generally comes in contact with the walls of the church, whose height effectually keep off the rays of the sun; of course this grass,

according to the principles I have laid down, ought to be found at the contact on the *north side*.

Let, then, those who seek for Fiorin, thrust down their fingers between the green sod and the north wall of the church; let them then claw up whatever grassy substance they find, and if it be not Fiorin roots or strings, I, myself, shall begin to doubt the universality of this grass, which from the observations I make in my own country, I am willing to ascribe to it.

My friend, MR. DICKENSON, Member for Somersetshire (to whom I transmitted these directions) found Fiorin roots at the north wall of his parish church, and inclosed some to me.

### THE THIRD PRIVATION,

WHICH directs us where to look for Fiorin, leads us to a great extent of ground, and lays open an acquisition of serious value to every planter, upon which he may enter at once with scarcely any expence.

I allude to young plantations; that is, those where the shade has not closed overhead, which rarely happens until they be 12 or 15 years standing.

This is a situation favourable to Fiorin; for the shade of the young trees interrupting the free circulation of air, is injurious to its competitors; and the protection from cattle, necessary for all plantations, saves also the nascent stolones of the Fiorin from being nipped off, or trodden down.

Hence it comes, that there is not a young plantation in IRELAND which is not well stocked with Fiorin; and whoever wants

strings or roots has only to go to the nearest, to claw up the mat covering the surface, which he will find composed, almost exclusively, of Fiorin strings, especially in winter.

I hope, and expect, that the case is the same in our sister island.

When LORD ROUS informed me that the roots and strings, transmitted to him by post, had failed, I requested his lordship to search his own young plantations; he immediately complied, instantly found Fiorin in abundance, and ascertained the partiality of his horse for this grass.

Though my immediate object be merely to shew where Fiorin is to be had for propagation, I cannot conclude without dwelling a little on the great benefit that will be derived, from encouraging the growth of Fiorin in our young plantations; interfering in its favour, and aiding this valuable grass in its contests with competitors, perfectly useless to us.

The nakedness of this part of the united

kingdom [Ireland] makes an increase of plantations very desirable for beauty and shelter.

The interests of the empire require vast forests of oak.

The inutility of the ground from the time young trees are planted, until they become valuable; is a serious impediment to the increase of our plantations; and limits the number of planters, to such as are possessed of both property and spirit.

A greater encouragement to planting cannot be given, than by making the ground so occupied as valuable to the possessor as it was before: it remains to shew, how easily and simply this important point is to be carried.

Fiorin is uninjured by shade; therefore, if, as we plant, we at the same time lay down the raw ground with Fiorin, we are even more secure of a crop than in open ground; for the rivals to this plant are less able to contend with it, when the free circulation of air is abated.

Nor will a Fiorin crop of hay injure the

young trees, as that of any other grass would; for, instead of rising erect and choaking them up, it lies flat on the ground in a thick mat, so that a stranger would never suspect a valuable crop could lie so close down.

A great impediment in the way of Fiorin cultivation, is the obstinate protection it requires from abuse by cattle; but in *plantations*, that protection must *necessarily* be given, therefore, this heavy expence attending Fiorin on other occasions, is here to be charged to a different account; as is also the expence of weeding; for both Fiorin, and young plantations, require to be cleared of all coarse weeds.

But are the spirited planters, who, not aware of the importance of this discovery, have gratuitously contributed to the improvement of their country, to be excluded from the benefits arising from it, in their plantations already formed?—

By no means; they may avail themselves of it, with a rapidity they will scarcely cre-

dit; and, with the greatest facility, secure the advantages of it in the very next crop; provided their plantations be not too far advanced, and the umbrella closed or nearly closing overhead.

They have only, during the winter, to weed out every thing that is not *grass*; and in May and June, when the different grasses distinguish themselves by their panicles, to weed out all that are not *Fiorin*.

They will not be troubled with many varieties; the sturdy *dactylis* (Cock's Foot Grass) bears shade next to the Fiorin: the *holecus lanatus* (Meadow Soft Grass) frequents young plantations: but these two grasses, when spontaneous, grow in tufts, and are easily known and extirpated. The *poa trivialis* (Rough-Stalked Meadow Grass) and *agrostis alba* (White Bent Grass) when known, may be also rooted out; but the Fiorin will soon choak these and other diminutive competitors: and as for that plague of farmers, *squitch grass*, happily here it is no nuisance; its meagre stalks will at first add

something to the crop, but the species will soon perish, under the suffocating mat of the Fiorin.

I now answer for it, that every proprietor of a young plantation in this island (and I firmly believe in the next), who shall follow my directions implicitly, and weed steadily, will early in October, 1810, mow a good Fiorin crop, which will improve the next year; and, until the trees grow too close, he will find better meadow among them, than in any other part of his land.

I lament that I am obliged to name so early a period for mowing, as the first or second week of October, but I dread adulteration from the falling leaves.

It may be deemed extraordinary that I do not name wet situations, as the proper places to look for an aquatic grass.

Fiorin is not an aquatic, *but amphibious*: and in very wet places generally mixed with the *Festuca fluitans*, (Manna Grass) and the *aira aquatica*, (Water Hair Grass) both so strongly resembling it, they would sometimes

mislead, and both so decidedly aquatics, that drought is fatal to each of them.

The situations we are led to, by its amphibious nature, to look for Fiorin, are such as are exposed to the alternations of wet and drought. The bottoms of ditches, wet in winter and dry in summer. Winter drains; and even the irrigator's little conduits, which, when preparing to let in his waters, he must free from the produce of summer vegetation; these will afford an inexhaustible stock of Fiorin roots and strings.

It remains to describe this grass: and happily it is so strongly marked by nature as scarcely to be mistaken.

Long strings, with lively green sprouts issuing from them at right angles, at a few inches distance from each other: the strings vary in length, from one to ten feet: in summer always green; sometimes part of them have a dull blood red shade; whence probably this grass got the name of *red robin*. Most of the strings whiten in win-

ter, when not covered up by their own mat, or by water, then they preserve their green: the whiteness is confined to the envelope, peel that off, and the small interior tube is always found to be of a lively green.

I have not met with any of Nature's productions bearing such resemblance to Fiorin strings, as could mislead the most careless observer, except the two aquatics I have mentioned.

These strings laid thin on a raw surface (especially if rich) any time from the 10th of September to the 1st of April, and lightly sprinkled with earth or compost, so as nearly to cover them, will surely vegetate and clothe the surface.

Between April and September the growth of weeds is more rapid than that of Fiorin, and will require much attention to secure their extirpation; in this period too, other grasses will rise and embarrass.

To these I have already enumerated, I shall add one description of ground, where

I expect Fiorin will be found in England; though I have not yet heard of its being noticed in such places in that country.

I mean cold, poor, sour, spritty, meadows; generally wet, and which, in this state, afford a most wretched crop of hay.

Such, with us, are generally mowed late; yet before the spontaneous Fiorin has attained to value, being then scarcely distinguishable by those who know it well.

I was tempted this season to try a fair contest between Fiorin and sprit, without breaking up the ground, according to my constant practice. I was able to irrigate a cold, moist, spritty meadow, through spring and most of the summer: very late in the season the meadow was thick covered with a formidable crop of sprit, bristling up and of great length; I was not uneasy, as my favourite grass was there also, and obviously thriving.

October 30th, when my friend the right honourable J. Corry, came to inspect my meadows; we examined this and mowed a

little of it; we were both astonished at the immense crop of excellent Fiorin, scarcely exceeded by my very best meadow.

I mowed the whole meadow on November 10th, and was amused by the facility with which such heterogeneous produce as Fiorin and sprit were kept completely distinct.

A boy followed the mower; and, as the swaird was laid in a straight line, he took hold of the sprit, which projected far beyond the main fleece; and shaking off the grass entangled with it, threw the sprit aside, leaving the Fiorin pure.

Thus the meadow afforded two distinct crops: the one valuable hay, and the other good litter.

A circumstance occurred which may turn out of much importance; some of the sprit was beginning to decay at the root; suffocated, no doubt, by the thick Fiorin mat. I shall next year give the Fiorin a better opportunity of exterminating its

rival, by not mowing before the middle of December.

Here is a new field for experiment ; and I am not without expectation the result will be, that we shall change the produce of such meadows, from the very *worst* to the very *best* grass, simply by changing the time of mowing.

Should, however, the sprit hold possession, it may be of little consequence, for *a priori*, these vegetables seem not to interfere with each other ; the sprit sending up through the surface a host of spears, from a tremendous stratum of gigantic roots spread some inches below it, while the Fiorin roots slightly touch the surface only : their stolones running horizontally with perfect freedom, among the erect spears of the sprit. My experiment seems to confirm this theory.

I entertain very sanguine hopes, from the adoption of this practice ; and earnestly recommend the trial. The universality of

the Fiorin will be more fully established by it ; and the great improvement in the crops of spritty meadows, by delaying the time of mowing, is fully ascertained by my friend and relation Sir George Hill, since he became a Fiorin amateur.

I, indeed, irrigated my spritty meadow ; manure would, in all probability, have served equally well to call the powers of Fiorin into more vigorous action, but I do not consider either of them as indispensably necessary.

Of all the speculations I have made, since I began to press Fiorin cultivation on the world, the present is amongst the most extensive : and also, I think, the most promising. It differs, likewise, materially from all the rest.

I do not now, as on other occasions, call for exertions, but merely for patience. I do not desire the proprietor to break up his ground by some expensive process, that he may exterminate useless occupants, and introduce a more promising favourite ; I only

request him not to interfere between them, by mowing too early; but to look on quietly, and to try, whether Nature will do the business for him of herself.

The utmost that is asked of him is, to clap her on the back at the expence of a little manure.

That I may not mislead I must observe, that the measure I recommend, in all probability, would not succeed with rushy meadows. This coarse enemy, from its bushy roots and habit of running into tufts, interfering too much with the surface.

Though I could mention other places where, no doubt, Fiorin would be found in England, I have pointed out enough to enable every person wishing to cultivate this grass, to stock himself.

I shall conclude, by reminding all amateurs, that though the superior quality, and enormous quantity of Fiorin hay crops, together with the luxuriant fleece of winter green food it affords, intitle it to a share of their very best ground: yet I consider

such uses as making a small part of the benefits that will be derived from this valuable grass.

The great advantage of it will arise, from the facility with which Fiorin can be introduced into our very worst, more especially if the unproductiveness of such grounds arises from their being too wet. The reclaiming these will be attended with little expence; and where the moisture is great, manure is not required.

I sometimes speculate, *a priori*, not having opportunity for experiment; but, from very wet grounds, I speak from experience and practice.

## APPENDIX.

MY object in this Appendix is to explain *how Fiorin grass is to be propagated.*

I have gone over that ground so often already, in different *printed* memoirs, and essays, dispersed by me among my private friends, that were I fully now to enter upon this part of the subject, I should merely make extracts from what is already, in some sort, before the public; or throw old directions into new words.

I shall, however, say generally, that of all the vegetables I am acquainted with, Fiorin is the easiest to propagate, and also the only one with which we can *at once* clothe our grounds compleatly to any ex-

tent, however enormous, at a small expence.

This facility arises from a strange quality, the hay of the *agrostis stolonifera* (Fiorin) possesses: that of vegetating for several months after it has been *mowed, saved, and housed*.

In laying down Fiorin, it is not the *seed*, however abundant, that we sow, but the *hay itself*, which, whether it be fresh and green from the scythe, or dry from the *loft*, is a matter of perfect indifference.

The saved hay,—or Fiorin strings, gathered in drains, or cut from the meadow, expressly for the purpose, are to be thinly scattered over *raw*, well prepared ground, then lightly sprinkled over with a few shovel-fulls of loose earth, or compost, so as to hold them down, but not entirely to cover them. If this be done carefully in winter, or very early in spring, a full crop is insured for the very next season.

Fiorin hay, radically and essentially different from all other, is composed, *exclusively*, of the strings of the *agrostis sto-*

*lonifera*; these are not dead matter, like *leaves* and *stalks* (the component parts of other hay), but animated by the principle of life; which they retain pertinaciously many months after they are severed.

Upon this singular endowment, all the curious and valuable properties of Fiorin probably depend.

I have, in other Essays, demonstrated, *a priori*, from the soundest principles of natural philosophy, that Fiorin hay, animated by vegetable life, *ought* to be saved through the winter months, with more facility, and greater certainty, than other hay in summer.

That the result corresponds with the theory, has, these two last winters, been compleatly established, to the satisfaction of an hundred eye witnesses.

Upon the same principle, we can account for the power of Fiorin to sustain *privations*, a topic on which I have already dwelled so much; for a plant pervaded

through all its parts by vegetable life, *ought* to sustain hardships that must prove fatal to other plants in which the seat of animation is local, or even partial.

The same clue will guide us to the diversified, and even contradictory qualities of Fiorin, and the facility with which it accommodates itself to the most opposite soils and climates.

For instance, its insensibility of COLD:— as we find it on the summits of our highest mountains; to wit, KNOCKLAID, BESSY BELL, COLTON, and even BEN NEVIS.

Of HEAT, as I have proved by the testimony of cavalry officers, who have long served in India, and even of the present General; that it is the chief support of their horses in Indostan: and the ground there laid down with it, by the very same process they saw me adopt.

It is with respect to WET, and DROUGHT, that the contradictory habits of Fiorin seem to reach the most opposite extremes.

I can shew, in my own demesne, Fiorin roots, that were submerged twenty inches deep, in October 1806, the water never taken off them since, yet they continue to send up their stolones to the surface in apparent health.

The spring following, I planted a Fiorin root on the top of my garden wall; it has never been approached since, yet it seems more luxuriant this summer than in either of the preceding. And I have, on other occasions, stated, that I have often found spontaneous Fiorin in the crevices of old walls, with their stolones hanging down.

From these facts, I entertain sanguine hopes that we can clothe our BARREN SANDS with this accommodating grass, and I have already pointed out in different Essays, the broad hints that Nature gives us, to make the experiment.

Finally, it is to the same principle of life, I ascribe the extreme prolific qualities of the strings, or stolones, of this grass, and the abso-

lute certainty we have, that they will produce a rich crop, if they be laid down with care, protected, and weeded attentively.

W. R.

Moy, Ireland,  
February 5th, 1810.



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