

six cwt. of Icnaboe guano, and he found the Peruvian guano the best. His soil was sandy. In another trial made last year between guano, wood ashes, Boast's inorganic, and rape dust, the cost of each of which was £2 5s. per acre. Guano was the best, rape the next, and the inorganic did very little good. After some further discussion on the point, but which was only a reiteration of the same principles as had been already stated, the fol-

lowing resolution was unanimously carried:—"That in order to ensure a large crop of turnips in the Weald of Kent and Sussex, the land should first be well drained, and ploughed early in the winter, and subsequently brought into a complete state of pulverization; and that, by a thorough system of cultivation, the growth of the turnips and other root crops may be beneficially extended."

MEAL AND FLOUR FROM POTATOES.

The following article taken from our cotemporary *The Irish Farmers' Journal*, upon this most important subject, seems at length to have been brought forward in a manner likely to command attention, and elicit the actual facts. It is almost needless to say that the nutritive value and productiveness of the potato has been long a vexed question; one, we fear, little understood by those whom it concerned most, and much de-scanted upon by those who, it would appear, understood it least: at all events, so it seems to be, from the statements now brought forward.

The matter has been taken up with much ability by Mr. Jasper W. Rogers, of Dublin, a civil engineer, who appears to have given the merits of the question considerable attention for several years. The facts he brings forward are indeed startling, for it would appear that the nutritive properties of the potato when *wholly* converted into *meal or flour* vary very little from those of wheat; while the aggregate produce in "nutritive material" proper for the support of animal life, which can be obtained from any given quantity of land, is **FOUR TIMES** that which can be had from wheat.

Can this be possible? Yet it would appear that the fact is backed by the undisputed results of agricultural and chemical experiments of the highest authorities, not sought for as regarded the potato only, but upon the general produce from vegetables, and their general nutrition.

We conceive it but right to draw attention to this subject, and urge its anxious consideration and investigation. If the statements brought forward by Mr. Rogers are facts, they are of the utmost consequence to the agricultural community. If they are not, full opportunity shall be given, so far as we are concerned, for ascertaining the exact reality. That the food produced in such variety appears to be excellent is evident: thus far it may be said "*the proof of the pudding was in the eating*;" but that we should be so long in the dark as to the actual produce of the potato, in comparison with

wheat, is indeed strange, and we shall only add that if the proof of this fact has been reserved for Mr. Rogers, he deserves well of his country, which so mainly depends upon the potato; and we wish him all due recompense for his talent and labours.

ARTIFICIAL PREPARATIONS FROM THE POTATO.

There is no other of our agricultural plants which have come in alternately for so great a share of eulogy and abuse as the potato. On one hand we hear of its being one of the best of nature's gifts; and on the other, that to its general cultivation in this country we may ascribe most of the misery of its inhabitants. Notwithstanding all the discussion which has taken place on the subject, it is surprising that the real value of the potato should be so little understood. In its ordinary form it is one of the most perishable articles of food which we possess; but it is capable of being rendered, by artificial means of an extremely simple character, not only portable, but capable of being preserved for an almost indefinite period. There is, in fact, scarcely any other vegetable production capable of being made to assume so many forms, or of being turned to account in so many different ways; but although this property has been long known to scientific men, it is surprising how little way has hitherto been made in putting the lower classes, who are forced to exist almost exclusively on a potato diet, in possession of this information.

The disease which made such ravages among the potato crop of last season has caused attention to be forcibly directed to these facts; and the conversion of the decaying portion of the crop into farina was a favourite project. It being known that the attention of Government was directed to the matter, numerous statements on the subject were placed before his Excellency; and among others one from Mr. Jasper W. Rogers, C.E., who had more than ordinary experience. That gentleman's plan was considered so very satisfactory that his Excellency the Lord Lieutenant at once gave directions that facilities should be granted for having it fairly tested. Some of the results of Mr. Rogers's method of making the potato available as food, in many different forms,

were exhibited on Saturday last, in the Board-room of the South Dublin Union Workhouse, before the guardians, and a number of other influential and scientific persons, in the form of an elegant *déjeuné*, all the items of which, with the exception of coffee, were prepared more or less from the potato; when a most satisfactory account was afforded by Mr. Rogers, of the different processes in their preparation, with much interesting information relative to the value of the potato itself, which, he very justly observed, is too much overlooked. Every one present was astonished at the rich treat provided on the occasion, which consisted of soup, stirabout, milk porridge, jellies, blanchmange, Spanish flummery, and pastry of all kinds, made, as we have already stated, principally of the produce of the potato, either as meal, flour, or fecula.

After the gentlemen present had partaken of the various preparations, Mr. Rogers observed, that the preparation of the meal and flour from potatoes was so simple that it could be accomplished in the cottage of the poorest peasant. He then described the component parts of each food upon the table. The general proportion being one-half potatoes; some, however—viz., milk porridge, "Scotch bread," and rock biscuits—being entirely made from it; also the jellies, blanchmange, &c., produced from the *pure fecula*, without animal matter of any kind—in fact, no addition but the usual seasonings. The soup also, which appeared to be a palatable and nutritious food for the lower classes, was stated to be made of a small quantity of bacon, thickened with meal of the potato, and which was capable of being made in a short period of time, at a cost of about one farthing per pint.

Mr. Rogers then alluded to the general impression as to the want of nutritive power in the potato, and deprecated the publication of statements which were founded in error, stating that there was "little, if any, nutriment in the potato." He contended that the nutritive properties of the meal and flour of potatoes were almost, if not entirely, equal to that of wheat; and then gave the following analyses of each, assuming the constituents for the support of animal life, contained in vegetables, to be starch, sugar, and gluten. When converted into meal, the potato contains—

Starch and sugar	84.8
Gluten	14.82
Oil	1.10
	100

While wheat, converted into meal, contained—

Starch and sugar	78.20
Gluten	17.53
Oil	4.27
	100

Thus showing that the difference between the gluten was but 2½ per cent., while the starch and sugar were more abundant.

The difference between "*meal and flour of potato*," prepared as recommended, and "*farina*," was pointed out. Farina is the starch of the potato, taken from the fibre, and contains nothing beyond the properties of

starch—while the *fibre*, which is thrown away in the manufacture of farina, is rich in animal matter and oil, and by being combined with the farina, or fecula, produces a meal, or flour, closely analogous to that of grain. This fact it was particularly necessary to bear in mind, in order to counteract the impression that there was but little nutriment in potatoes—a strange one, where so many millions lived on them as their only food.

A comparison was then entered into between the relative amount of food obtained from an acre of land, in wheat and potatoes. On this subject, Mr. Rogers stated that he did not rely on his own experience, but cited the authority of practical men as to produce, and of eminent scientific men as to the analysis of the respective crops, stating the following as the result of his inquiry:

	Starch & Sugar.	Gluten.	Oil.
1 acre of wheat	825lbs.	185lbs.	45lbs.
1 acre of potatoes	3427lbs.	604lbs.	45lbs.

Thus it appears that potatoes will produce of meal and flour, FOUR TIMES, nearly, in weight, what can be had from wheat—a fact not generally known, but which could not be contradicted. He begged to impress this startling fact on the minds of those who heard him, and hoped to rescue the potato from the calumnies thrown upon it. In an establishment such is the South Dublin Union Workhouse, containing from 1,800 to 2,000 persons, Mr. Rogers stated that from fifty to sixty paupers would be able to prepare, of potato meal and flour, by the simple means in operation, a sufficiency—say, four to five tons per week—for the use of the house, mixed with other meal—by which a saving would be made in the expenditure of the establishment of above £1,500 a year. He sat down amidst much applause.

Sir Robert Shaw, Bart., who presided on the occasion, expressed his astonishment at what he had seen, and at the statements made by Mr. Rogers, as to the nutritive properties of the potato, compared with those of corn, which differed greatly from the impression which had been hitherto on his mind on the subject. He would have supposed it impossible to put the potato into so many different forms as they had before them. They all owed great obligations to Mr. Rogers, for the handsome manner in which that entertainment had been put before them, and in the name of the guardians, he (the chairman) returned him thanks. He had brought most valuable information before them, which would be of great use, if disseminated through the country.

Mr. Rogers returned thanks, and, in doing so, observed that his great object was to render the manufacture of the potato general, henceforward, throughout the country—not alone for workhouses and jails, but that every poor cottier might be enabled to have his bread, his stirabout, and his soup, as well as his boiled potato—which could be done, by teaching the people a most simple process, capable of being carried on in every cottage in the country.

Considering the large and influential body of gentlemen before whom Mr. Rogers so successfully exhibited the good account to which our much-abused vegetable may be turned, it is to be hoped that some of them, at

least, will further test the advantages which he held forth. No better expedient could have been adopted for showing the value of the potato, in a way not likely to be forgotten; and it must be remembered, that, although it was extraordinary circumstances which caused the matter to be brought so forcibly under public notice, yet under ordinary circumstances it cannot be questioned that a portion of the crop may be converted into meal, with great advantage, and be made the means of adding largely to the comforts of our peasantry.—*Irish Farmers' Journal.*

As a sequel to the foregoing remarks, and for enabling any one to judge of the crops best worth his growing, as well as for showing the comparative amounts of nutriment afforded by certain crops of corn and vegetables, we subjoin the following table of the average weight per acre of thirteen crops of corn or vegetables;

and also of their organic or inorganic constituents, calculated by Edward Solly, Esq., F.R.S.

Average Produce per Acre.		Water.	Unacidified Organic Matter.	Protein Compounds*.	Inorganic Matter.
lbs.		lbs.	lbs.	lbs.	lbs.
1. Turnips	25 tons, or 50000	51800.0	5309.0	442.4	448.0
2. Carrots	15 tons, or 30000	29438.6	3128.2	655.2	383.0
3. Parsnips	12 tons, or 24000	21642.7	4642.2	561.6	333.3
4. Potatoes	8 tons, or 17920	14228.5	3053.6	433.7	204.2
5. Barley	35 bah., or 1800	237.0	1314.2	205.9	42.3
6. Oats	40 bah., or 1700	228.0	1315.7	187.8	58.5
7. Peas	25 bah., or 1200	137.6	1017.7	309.4	45.3
8. Beans	27½ bah., or 1750	138.2	979.0	581.2	51.6
9. Wheat	28 bah., or 1080	243.6	1184.4	248.4	33.6
10. Cabbage, 10000 plants or 80000		73840.0	4134.0	1456.0	521.0
11. Jerusalem Artichokes, 500 bah., or 28000		22176.0	4885.8	599.0	336.0
12. Beet 75000		65850.0	7312.6	1020.0	817.5
13. Buckwheat, 30 bah., or 1300		162.5	94.52	177.5	17.5

* "Protein compounds" form the nutritive portion.

MALT TRADE.

COUCH CASE AT CROYDON, SURREY.—May 30, 1846.

Before the Magistrates, Messrs. SUTHERLAND, LUCAS, HEMMIS, and SIMEON.

Mr. F. Shaw attended to answer an information laid against him at the instance of the Board of Excise, charging him with having unlawfully packed and compressed the grain in his couch, for which offence he had subjected himself to a penalty of £100, 7 and 8 Geo. 4, cap. 52, sec. 32, 33, and 34.

Mr. R. Russell, solicitor, of Croydon, appeared for defendant.

The evidence of the Excise officers went to prove that on the 6th April they attended the malthouse of defendant at Croydon, and gauged the contents of the couch that had just been thrown from the cistern, and found it to contain 129 bush. 3-10ths; but, as the grain appeared to be more closely packed than it ought to have been, they ordered it to be replaced in the cistern, and then again turned back into the couch; and, upon gauging it the second time, ascertained the quantity to be gross 139 bush. 6-10ths (subject to a reduction of 5 per cent.) Under these circumstances the defendant was now charged with having unlawfully packed and compressed his couch.

In the cross-examination the officer said he never had cause of complaint against defendant; had been present at previous emptying of cisterns in defendant's malthouse, and never objected to the manner of emptying, which was very different from the manner the couch was filled by order of the generals. Upon the examination of the superior officers, they said they did not allow the man to throw the grain the second time into the couch in his own way, but compelled him to empty the corn from cistern into couch in *two cones* just inside the couch, and then they (the offi-

cers) levelled it by raking the corn lightly all over the couch. They admitted that by this process a greater quantity of air was allowed to remain between the grains, and that therefore, to some extent, they gauged air instead of corn, when they found the increase. They likewise admitted that as the maltsters threw the corn with some force *levelly* all over the couch, the air would be excluded, and the grain be much closer, and consequently not gauge so much in quantity. But they said the *excise authorities considered it illegal* to throw the corn levelly from the cistern into the couch, and produced a printed document to the magistrates, containing instructions to them (the officers) how to fill a couch; but, upon being asked if that was put in as evidence, and if those instructions were a legal document from the act under which the maltster carried on his business, the said document was withdrawn, admitting the act or law gave no such instruction.

It was further admitted that no artificial means of pressure had been resorted to, and that the method adopted by them (the officers) was the most ingenious that had been devised of getting the greatest quantity of air amongst the grain, and thus increasing the *apparent* quantity in the couch.

It appeared likewise in evidence the couch was only 10 inches 7-10ths *deep*, and that the officers, in leveling, made a *variation* of no less than 1 inch 7-10ths; the lowest being 9 inches, and the highest 10 inches 7-10ths; that had the maltster at any time levelled his couch so irregularly, they should have complained. That every inch contained 12 bush. 8-10ths.