

ly any improvement over the practice in the days of our mediæval English ancestors, when all the *entrées* or "made-dishes" were composed of meat or fish "hewed into gobbets," or "ground into doust," and after being boiled into a kind of mush with broth, eggs, and milk, were flavoured with an indiscriminate mixture of salt, sugar, ginger, pepper, cinnamon, cloves, and all sorts of herbs.

Wherefore, we rejoice greatly when any one who is mistress of her subject, as the author of the book mentioned at the head of this article undoubtedly is, undertakes to enlighten our people on this important matter.

For it is an important matter, considering that the proper preparation of food not only promotes health, but is highly conducive to the increase of cheerfulness and good humour.

Miss Richards has been for some years at the head of the School of Cookery, whose head quarters are in St. Catherine Street, Montreal.

Not only do ladies of the wealthy classes attend her demonstrations, but cooks, who are anxious to improve in their business, frequent the school in considerable numbers; and we hear that, this winter, pains will be taken to attract the attention of our poorer sisters, who, if they only knew and would put in practice the secrets that nine French women out of ten are familiar with, would not only find their husband's wages able to furnish a far better provision of palatable food, but would infinitely improve the temper and disposition of the household while passing the long winter evenings by the not too cheerful coal-stove. See, on this subject, Brillat Savarin's "Physiologie du goût," a book very well worth reading by all who can enjoy sound sense, and brilliant wit, conveyed in a most enchanting style.

This little book does not profess to be an original work, but as far as we have looked into it is a happy selection of receipts gathered from the works of both English and French authors. Here and there, we note certain counsels that we are inclined to reject; for instance, we are told to put salmon into lukewarm water; now, all fish of the salmon tribe, from the White-fish of the Lakes to the Brook-trout, should be plunged into strong salt and water in a tremendous state of ebullition, and if the fish is in slices, the water should be allowed to boil up again between the insertion of each slice. By this treatment, and only by it, can the end between the layers or flakes of the fish be rendered firm. As we had in England, on our family's estate, on the banks of the Severn, a salmon fishery that gave us a supply of this superb fish daily, from February 1st to August 31st, we had to try all sorts of ways to attain perfection in preparing it, and the above plan, that we ourselves gathered from Sir Humphrey Davy's "Salmonia," which, by the bye, ought to be *Salmoniana*, was, after many an experiment, decided upon as the most perfect.

The observations upon frying are particularly good. If the medium, be it fat, dripping, or oil, is not as hot as it can be made without burning, no good frying can be done. Frying must involve a deep pan with enough fat, &c.; smearing a pan with butter, and cooking fish, &c., on it, is *sautéing*, from the French *sauter*, to jump.

Not to find fault, but to supply an omission, we give Sydney Smith's salad sauce; we quote from memory, but our version may be depended upon as pretty accurate:

"The pounded yellow of two hard-boiled [eggs].
The muse advises, and your poet begs.
Next, once with Durham mustard fill the [spoon];
Distrust the condiment that bites so soon.
But deem it not, thou man of herbs, a fault
To add a double quantity of salt.
Twice the full spoon with oil of *Lucca* [crown],
And once with vinegar, procured from [Town].
Let onion atoms lurk within the bowl,
And, scarce suspected, animate the whole.

Bar the onions, the sauce is perfect: what man endowed with a discriminating palate would defile the delicate flavour of a Cos lettuce with onions? He who should so far err, deserves to be kept awake by indigestion for a

Lucca oil is the only olive oil used at the best tables, and Crosse and Blackwells malt vinegar is good enough for anything.

We congratulate the publisher on the "toilette" of the book; paper, print, and binding are all excellent of their kind; and the price puts it within the reach of most purses.

LAWES ON MANURES FOR THE TURNIP.

(By the Editor.)

Judging from the analysis of the turnip, the specific manure for this crop should be an alkali of some sort rather than phosphoric acid; for root and top contain a proportion of alkalies to phosphoric acid of five to one. Is it so in common practice? By no means, and here is another case in which practice deviated theory. The striking influence of all kinds of phosphates on the swede or the turnip was well known to farmers long before Baron von Liebig wrote on the subject. It is true that, in many parts of England, wood ashes were used for catch-crops of turnips, but the produce from the ashes was really due to the phosphoric acid contained by all incinerated wood, particularly beech, rather than to their potash. We ourselves have shown that lixiviated ashes produce quite as many tons of turnips to the acre as ashes undepurified of their potash, but this series of experiments was tried on land which had been regularly manured with dung for many previous rotations, and where, therefore, there was present an abundance of potash.

Still, as Professor Liebig, in his *Lectures on Agriculture*, persisted that the Rothamsted experiments were wrongly conducted, and that the deductions drawn from them were erroneous in the highest degree, Lawes and Gilbert were induced to repeat the experiments on a larger scale, with a view to the refutation of Liebig's assertion that: "It is certain that this incessant removal of the phosphates (by the sale of flour, cattle, &c.) must tend to exhaust the land and diminish its capability of producing grain. The fields of Great Britain are in a state of progressive exhaustion from this cause, as is proved by the rapid extension of the cultivation of turnips and mangels, plants which contain the least amount of the phosphates, and therefore require the smallest quantity for their development." And, as a commencement of the proof that the professor was utterly mistaken in his theory of the manure for turnips as we have seen he was in his theory of the manure for wheat, let us look at the following table, in which is given the amounts of bulb grown on the experimental plots at Rothamsted from 1843 to 1850, both years inclusive. They are divided into:

Years.	Plot continuously unmanured.				Plot with superphosphate alone every year.				Plot with superphosphate and mixed alkalies.			
	Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.
1843	4	3	3	2	12	3	2	8	11	17	2	0
1844	2	4	1	0	7	14	3	0	5	13	2	0
1845		13	2	1	12	13	3	12	12	12	2	8
1846					1	18	0	0	3	10	1	20
1847					5	11	0	1	5	16	0	0
1848					10	11	0	8	9	14	2	0
1849					3	15	0	0	3	13	2	8
1850					11	9	0	0	9	7	1	12
Totals.					65	16	1	1	62	5	1	20
Means.					8	4	2	4	7	15	2	20

First, the continuously unmanured plot;

Secondly, that with a large amount of superphosphate of lime each year;

Thirdly, that with a very liberal dose of potash, with some soda and magnesia (alkalies), in addition to superphosphate of lime. The superphosphate was entirely free from nitrogen, being made by the action of sulphuric acid on burnt bonedust.

After three years consecutive growing of the same plant on the same land, the crop became not worth weighing. Eight successive crops of turnips manured with superphosphate of lime alone yielded an average of 8½ tons of bulb. The addition of a large dose of alkalies—much greater than could be removed by the crop—to the superphosphate had no effect at all on the average yield; for the diminution of the crop by a mean of about half a ton— $\frac{1}{16}$ of the whole may be disregarded.

The deduction we should make from the above series of experiments is this as the value of the swede or the turnip in feeding cattle is due—as I have often insisted in this publication—not alone to the contents of the bulb, as determined by chemical analysis, being converted by the animal into its own flesh, fat, &c., but to some, as yet unknown, special agency which they exert in developing the assimilative processes of the animal; so, I believe the effect of the phosphoric acid on the swede or turnip is due to some special agency which develops the assimilative processes of the plant. And this is the more likely, because in the case where the superphosphate is immediately neutralised by the large dose of alkalies, we see that the efficacy of the manure is thereby reduced. And again, the effects of the phosphoric acid, as such, cannot be due merely to the liberation of the alkalies of the soil; for in that case we should expect that the artificial dose of these would at least have increased the crop.

Hence, we must conclude that phosphoric acid, though it forms so small a proportion of the ash of the turnip, has a very striking effect upon its growth, when applied as manure; and it is equally certain that the extended cultivation of root-crops in Great Britain cannot be due to the deficiency of this substance for the growth of grain, and to the less dependence upon it of the root-crops, as supposed by Liebig.

And what, now, are the conclusions we draw from what we have seen of the effects of nitrogen as a manure for wheat, and of phosphoric acid as a manure for swedes and turnips? First, that, taking into careful consideration the tendency of all experience in practical farming, as well as the collective results of the Rothamsted investigations, it is pretty certain that the analysis of a crop that is sold off a farm affords no direct guide to the

nature of the manure required to be provided for its increased growth from sources extraneous to the home manures of the farm, that is to say, artificial manures; or, in other words, if land is well and regularly manured with the dung of the stock kept on the farm nitrogen for the grain-crops, and phosphoric acid for the root-crops will be the only imported plant-food required. (1)

Correspondence.

Richmond, 16th Sept. 1895.

To the Editor of
THE AGRICULTURAL JOURNAL.

Dear Sir,

I should like to bring to the notice of the farmers, who are readers of the Journal, a few of the exhibits at the Richmond and Sherbrooke Exhibitions.

I will only mention a few of the parties that I am well acquainted with. Of course all the prize winners are mentioned in the different newspapers, but very few farmers know the parties, and imagine they are all great breeders or specialists, and that it is no use they themselves exhibiting.

Now the following prize winners belong to the class, styled—small farmers:

Mr. Robert Allen of Melbourne, took most, if not all of the first prize in Leicester owes, rams, and lambs; Mr. Franks, of the same place was a very successful prize winner; Messrs Stephens, Lyster and others of the same class were prize winners in cattle, pigs, &c. Mrs. Garono, of Melbourne, was a more than usual prize winner in Dorking fowls; a very favorite bird of mine; as also of the English housewife: (and of the Editor).

Highest scoring pair of Dorking chicks; silver cup.

Highest scoring pair of fowls on exhibition; diploma and \$2 00

Best pair of Silver Gray Dorking Chicks; special prize.

Best pair of Silver Gray Dorking Chicks; 1st prize.

Best breeding pen of Dorking; 1st prize.

My object in asking you to notice these prizes in your journal, is to show the small farmer that it is not necessary to be a specialist, or to be at any great expense, to be a successful prize winner.

The above prize winners have

(1) The use of nitrogenous manures for mangels, even where the dressings of farmyard dung are superabundant, is and always been, a puzzle to me as far as regards the theoretical reasons for their adoption. As to their practical use, I have no hesitation in saying that any farmer who sows mangels without adding to the ordinary coat of dung a supply of at least 30 pounds of nitrogen, either in the form of nitrate of soda, sulphate of ammonia, or guano, is throwing away at least eight tons of his potential crop.—Ed.